DRAFT INITIAL STUDY
AND MITIGATED NEGATIVE DECLARATION

FOR THE

BIDR, LLC

WESTSIDE TREND EXPLORATION WELL PROJECT

KERN COUNTY, CALIFORNIA

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August 2025

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Mitigated Negative Declaration

Project Name:

Westside Trend Exploration Well

Lead Agency Name and Address:

Department of Conservation, California Geologic Energy Management Division

715 P Street MS 19-06, Sacramento, CA 95814

Attn: Westside Trend Exploration Well Project

Contact Person, Phone Number, and Email Address:

Christine Roybal, 916-268-2535, Christine.Roybal@conservation.ca.gov

Attn: Westside Trend Exploration Well Project

Project Proponent Name and Address:

Bidr, LLC

19100 7th Standard Road, McKittrick, CA, 93251

Project Description:

Bidr, LLC (Bidr) applied to the California Department of Conservation, Geologic Energy Management Division (CalGEM) for a permit to drill one new exploratory well 1,500 feet south of the McDonald Anticline Oil Field and approximately 1,500 feet east and 1,100 feet north of the Carneros Creek Oil Field in Kern County.

The Project includes the drilling of one exploratory well, the creation of a new well pad, and the installation of a temporary storage facility. The impacts of this project are addressed in this Initial Study/Mitigated Negative Declaration (IS/MND).

Project Location:

The Project is in unincorporated Kern County, California, approximately 43 miles west of Bakersfield. The well will be located in Section 29, Township 28 South, Range 20 East MDB&M on APN 085-170-09 (Lat: 35.465456628 Long: -119.836119926). The location is approximately 1,500 feet south of the McDonald Anticline Oil Field and approximately 1,500 feet east and 1,100 feet north of the Carneros Creek Oil Field (Figure 1). The intersection of Highway 33 and Seventh Standard Road is located approximately 8 miles east of the Project Area boundary. The Project well would be drilled on private land.

Findings:

It is hereby determined that based on the information contained in the attached Initial Study, the Project, with implementation of the mitigation measures listed therein, would not have a significant effect on the environment. Mitigation measures necessary to avoid the potentially significant impacts on the environment are included in the Initial Study, which is hereby incorporated and fully made part of this Mitigated Negative Declaration. Bidr has reviewed

and agreed to implement all mitigation measures in the Initial Study. A Mitigation Monitoring and Reporting Plan (MMRP) containing each mitigation measure in this IS/MND has been prepared for adoption by the Department of Conservation, as the lead agency, and all mitigation measures, implemented as required and as outlined in the MMRP, will be incorporated as Conditions of Approval in all permits for the Project to ensure that mitigation measures are implemented, as required.

Pursuant to Section 21082.1 of the California Environmental Quality Act, the Department of Conservation has independently reviewed and analyzed the IS/MND for the proposed Project and finds that this document reflects the independent judgment of the Department of Conservation. The Department of Conservation also confirms that the Project mitigation measures detailed in this document are feasible and will be implemented as stated in the IS/MND.

_____ _____

Signature Date

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SECTION 1 Introduction

Bidr, LLC (Bidr) has applied to the California Department of Conservation, Geologic Energy Management Division (CalGEM), for a permit to drill one new exploratory well 1,500 feet south of the McDonald Anticline Oil Field and approximately 1,500 feet east and 1,100 feet north of the Carneros Creek Oil Field in Kern County.

EnviroTech Consultants, Inc. prepared this Initial Study (IS) on behalf of and with critical review, input, and policy expertise of CalGEM pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code, §21000 et seq.) and the CEQA Guidelines.

1.1 Summary of the Proposed Project

Bidr has submitted a Notice of Intention (NOI) to drill one new exploratory well to CalGEM. The new well would be drilled on a single new well pad and connected via new flow lines to temporary infrastructure at the well pad site (proposed Project). The well would be drilled in accordance with Chapter 1, Division 3 of the Public Resources Code.

1.2 Objectives of the Project

The objective of the proposed Project is to locate reserves of recoverable oil and gas by drilling, completing, operating, and maintaining one (1) exploratory well adjacent to the existing McDonald Anticline and Carneros Creek Oil Fields. The proposed exploratory well lies within the unincorporated area of Kern County. Drilling, completing, operating, and maintaining the single well in Kern County constitutes the proposed Project. CalGEM has determined that drilling, reworking, and abandoning wells are discretionary actions subject to the provisions of CEQA.

CalGEM's objective is to respond to Bidr's NOI to drill the exploratory well. As the CEQA lead agency for the Project, the Department of Conservation, acting through CalGEM, is analyzing the Project as a whole. The Project includes the drilling of one exploratory well, the creation of a new well pad, and the installation of a temporary storage facility. If recoverable oil and gas reserves are located, production and maintenance activities would occur, including the construction of permanent production facilities, which would require a separate land use permit and associated CEQA analysis. The timing for plugging and abandoning the well, as well as decommissioning the attendant production facilities, and restoring the well pad site, is dependent upon the viability of the proposed Project, and would also require a separate CalGEM permit and associated CEQA analysis.

1.3 Purpose of the Environmental Assessment

This IS was prepared to evaluate the potential environmental effects of the proposed Project and support CalGEM's decision-making regarding the NOI to drill the exploratory well. An additional environmental assessment will be required for the construction of any permanent production facilities or to plug and abandon the well.

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1.4 Other Agency Actions

CalGEM has permitting authority for this proposed Project on private land in Kern County. The proposed Project had initially been prepared to be submitted for a Kern County Permit pursuant to the Kern County Final Supplemental Recirculated Environmental Impact Report and the Revised Kern County Zoning Ordinance for Local Oil and Gas Permitting that was adopted by the Kern County Board of Supervisors on March 8, 2021. However, following a decision by the Court of Appeal of the State of California Fifth Appellate District, permitting activity was suspended on January 26, 2023.

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SECTION 2 Project Description

Bidr has applied for one permit to drill and complete an exploratory well adjacent to the existing McDonald Anticline and Carneros Creek Oil Fields. This section provides a detailed description of the proposed Project.

2.1 Project Location

The Project Area is located within unincorporated Kern County, California, approximately 43 miles west of Bakersfield. The well will be located in Section 29, Township 28 South, Range 20 East MDB&M on APN 085-170-09 (Lat: 35.465456628 Long: -119.836119926). The location is approximately 1,500 feet south of the McDonald Anticline Oil Field and approximately 1,500 feet east and 1,100 feet north of the Carneros Creek Oil Field (Figure 1). The intersection of Highway 33 and Seventh Standard Road is located approximately 8 miles east of the Project Area boundary. The nearest sensitive receptors to the Project Area (residences) are over one mile from the proposed well (Figure 2).

2.2 Current Oil and Gas Operations

The McDonald Anticline Oil Field is an active oil field. The field is developed with 38 active wells operated by three different operators. The Carneros Creek Oil Field is an active oil field. The field is developed with 6 active wells operated by one operator.

Bidr does not currently have any oil and gas operations within the Project Area.



Figure 1 - Project Location Map (created January 21, 2024)



Figure 2 - Location of Sensitive Receptors in Relation to the Project Area (created November 8, 2023)

2.3 Project Components

The Project would be constructed on approximately 2.1 acres of undisturbed land. It would consist of constructing a new well pad (involving vegetation removal and grading), drilling one well, and construction of an associated temporary crude oil production storage facility. A plot plan of the proposed well pad and associated equipment is shown in Figure 3.

Fluid handling lines are necessary for oil production. Liquid (oil and water) from the wellhead would be routed to a wash tank for separation into oil and water. The oil is sold via trucks or a pipeline sales system. Water would be sampled and profiled for disposal at an appropriate waste management facility. The tanks will be on vapor recovery (VRU), with the captured gas going to a heater or well head engine. Figure 3 details the flow from the well.

2.4 Project Construction

Work is anticipated to occur five days per week from 7 AM to 5 PM for preparation of the well pad site and installation of associated ancillary equipment. Due to the complexity of drilling and the hazards associated with leaving a well unattended during the drilling process, drilling operations are typically conducted 24 hours per day. Drilling activities will be performed seven days per week.

Construction would occur in five phases, listed below:

- Grading (12 days)
- Rig Setup (3 days)
- Well Drilling (18 days)
- Rig Decommission (3 days)
- Facility Construction (20 days)

A construction crew of up to 22 people would be required to complete the proposed Project. Construction crews would be hired from the Kern County region. Table 2.4-1 below lists the expected equipment that would be used to construct the well pad, drill the well, and construct temporary production facilities.

During site preparation activities the well pad site would be graded, watered, and compacted to establish a level and solid foundation for the drilling rig and temporary production facilities. Topsoil would be stabilized, consistent with San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation XIII requirements. Earthmoving activities would be limited to a combined total disturbance of less than 2.1 acres.

Nighttime lighting may be used during construction and drilling operations but would be removed following completion of the Project. The grading phase would include dirt work to prepare the site for the well pad, as well as drilling and setting the well conductor,

cellar, rat hole, and mouse hole. The rig setup phase would consist of mobilization of the rig on the well pad site. The drilling phase would consist of drilling and various tasks associated with the drilling, including installation of blowout prevention equipment, cementing, mudlogging, etc. The rig decommission phase would consist of the de-mobilization of the rig from the well pad site. The facility construction phase would include the installation of production facility equipment and associated welding activity.

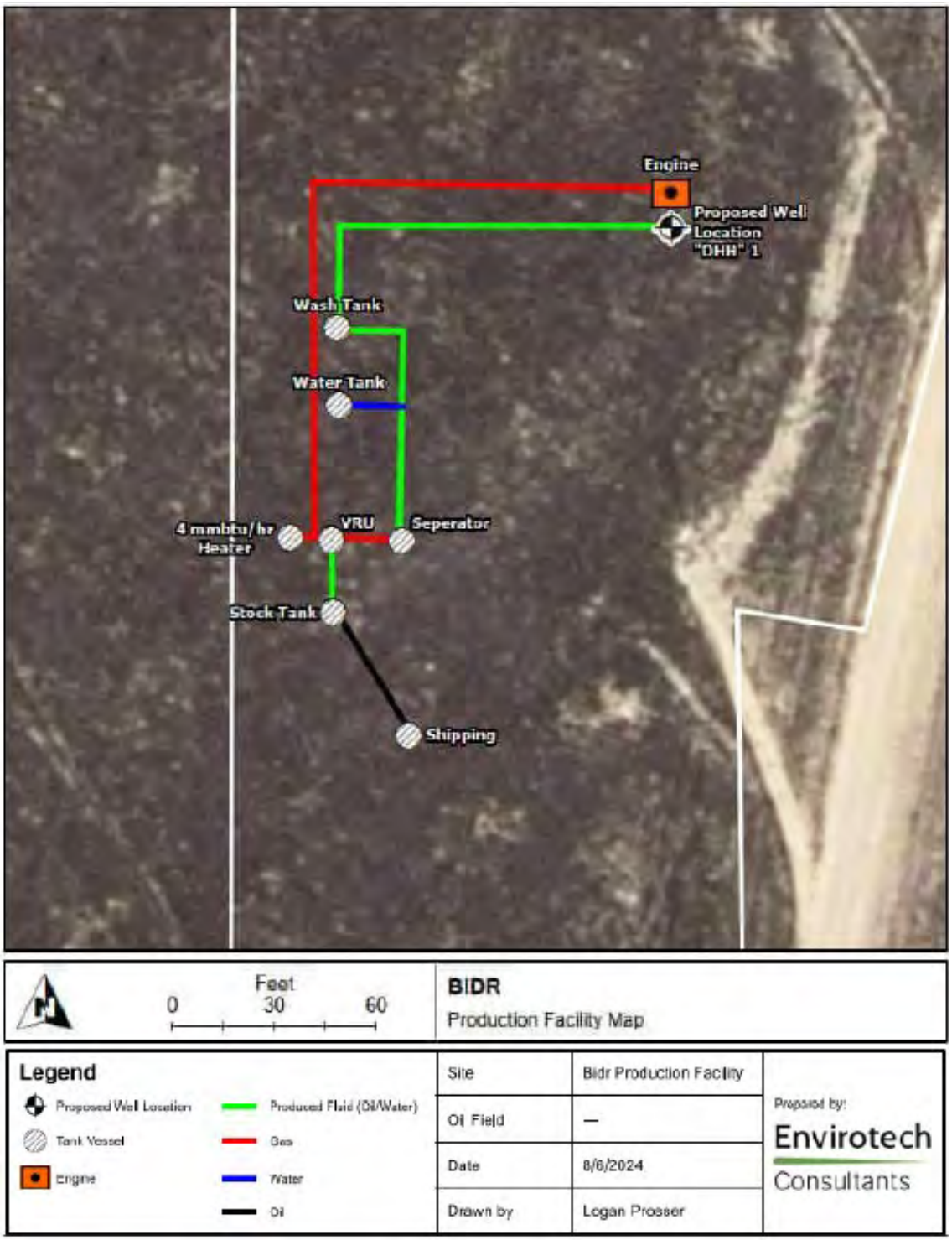

Figure 3 – Plot Layout of Proposed Well Pad and Associated Equipment (created August 6, 2024)



Figure 4 - Proposed Well Location (created January 10, 2024)

Table 2.4-1 Construction Equipment Required for Each Phase

Project Activity	Equipment	Quantity	Total Operating Hours/Day	Horsepower[1]
Grading (12 Days)	Dozer	1	8	150
	Grader	1	8	224
	Excavator	1	8	248
	Drill Rig	1	2	185
	Pump	1	3	84
	Loader	1	8	164
Rig Setup (3 Days)	Forklift	1	10	150
	Crane	1	10	231
	Welder	1	10	46
Well Drilling (18 Days)	Drill Rig	1	24	650
	Mudpump	2	24	1000
	Genset, Main Rig	2	24	400
	Genset, Instrumentation	1	24	127
	Forklift	1	8	150
	Genset, Controls	3	24	60
	4000w Light Tower	3	12	15
	8000w Light Tower	3	12	30
	Backhoe	1	12	97
	Welder	2	24	46
Rig Decommission (3 Days)	Forklift	1	10	150
	Crane	1	10	231
	Welder	2	10	46
Tank Facility Construction (20 Days)	Crane	1	4	231
	Forklift	2	6	89
	Backhoe	2	8	97
	Welder	2	8	46

Notes: [1] Default CalEEMod values are assumed unless project-specific equipment data was provided.

All offroad construction equipment will need to be mobilized to the Project Area. The Project Area would be accessed via existing access roads, including Seventh Standard Road. Equipment and materials hauling vehicles would primarily get to and from the site using Seventh Standard Road which connects to State Highway 33. Worker and vendor trips for grading and facility construction were modelled using 18 workers and 18 vendors per day at two trips per person and were based on travel from Bakersfield, CA, at 50 miles each way. Worker and vendor trips for drilling were modeled using 22 workers and 18 vendors per day at two trips per person and were based on travel from Bakersfield, CA, at 50 miles each way. Worker and vendor trips for rig setup and rig decommission were

modelled using 10 workers and 12 vendors per day at two trips per person and were based on travel from Bakersfield, CA, at 50 miles each way.

Soil cuttings and water generated during the well installation will be stored onsite pending waste profile analysis. Soil will be stored in stockpiles placed on plastic sheeting and covered with plastic sheeting. Water will be stored in half bins. One water sample will be collected from each half bin at the completion of drilling and a representative composite soil sample will be collected from the soil cuttings for purposes of waste profiling. Following waste profiling, if the derived waste is found to be contaminated it will be properly disposed of in accordance with federal and state requirements at the appropriate off-site facility. Waste that is not contaminated may be spread on site. Approximately 16,000 barrels (bbl) (672,000 gallons) of water would be required to drill the well (note 1 bbl is equal to 42 gallons). Water would also be used for dust control during project construction. Exposed areas will be watered twice per day, for a total use of approximately 14,000 bbl (worst case 250 bbl per day). Water for drilling and dust control would be obtained from the Belridge Water Storage District through a nearby operator. The water would be delivered by tanker truck generating approximately two vehicle trips per day.

Table 2.4-2 summarizes the vehicle trips associated with Project activities. Where Project-specific information is not known, the trip lengths for vendor and haul trips during construction are based on assumptions for Kern County as included in the CalEEMod database. Workers are assumed to travel from the surrounding communities in the Bakersfield area. Water transport is included in the haul trucks category.

Table 2.4-2 Construction Worker, Vendor, and Hauling Trips by Phase

Phase Name	Workers		Vendors		Haul Trucks	
	Number of One-Way Trips Per Day	One-Way Length (miles)	Number of One-Way Trips Per Day	One-Way Trip Length (miles)	Number of One-Way Trips Per Day	One-Way Trip Length (miles)[3]
Grading (12 Days)	36	50	36	50	16	50
Rig Setup (3 Days)	20	50	24	50	30	50
Well Drilling (18 Days)	44	50	36	50	36	50
Rig Decommission (3 Days)	20	50	24	50	30	50
Facility Construction (20 Days)	36	50	36	50	16	50

2.5 Project Operation

Following completion of construction activities, the well would be temporarily operated under CalGEM permit requirements by Bidr. Depending on well production volumes, long-term operation of the proposed Project would require additional oil processing and storage equipment at the well pad site. The temporary equipment would be utilized until permanent facilities can be constructed. Any CalGEM, County and SJVAPCD permits would be acquired as necessary for this equipment. Temporary and long-term operational activity for the well would involve at least two visits to the well pad site per day in a worker truck with a roundtrip distance of 100 miles. Fluids produced by the well would initially be transported via vacuum trucks and hauled approximately five miles to an existing facility. This equates to one vacuum truck trip per day to the well pad site with a modeled worst-case roundtrip distance of 100 miles. If propane is used for the tank's heater, this would add 1-2 trucks per week to supply propane storage. Depending on well production, permanent processing and equipment would be installed at the well pad site. Permanent equipment necessary for operation of the well and production facility is listed in the Air Quality Impact Analysis included in Appendix A. Otherwise, the well will be plugged and abandoned, the appurtenant facilities decommissioned, and the well site restored in accordance with applicable requirements.

2.6 Project Design Features

Table 2.6 below presents a list of project design features (DFs) and/or applicable regulatory requirements (RRs) that contribute to minimizing the potential environmental impacts of the Project.

Table 2.6-1 Project Design Features or Regulatory Requirements

#	Design Feature or Regulatory Reference	Potential Impact Category
RR-AIR-1	Compliance with SJVAPCD Rule 2201 (New and Modified Stationary Source Rule)	Air Quality
RR-AIR-2	Compliance with SJVAPCD Rule 2010 (Authority to Construct and Permit to Operate)	Air Quality
RR-AIR-3	Compliance with SJVAPCD Rule 2280 (Portable Equipment Registration)	Air Quality
RR-AIR-4	Compliance with SJVAPCD Rule 4101(Visible Emissions)	Air Quality
RR-AIR-5	Compliance with SJVAPCD Rule 4623 (Storage of Organic Liquids)	Air Quality
RR-AIR-6	Compliance with SJVAPCD Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities)	Air Quality

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RR-AIR-7	Compliance with SJVAPCD Rule 8031 (Bulk Materials)	Air Quality
RR-AIR-8	Compliance with leak detection and repair (LDAR) practices in accordance with SJVAPCD and CARB regulations	Air Quality
DF-EN-1	The Project includes several energy- and fuel-efficient design features	Energy
RR-EN-1	Compliance with CARB anti-idling and emissions requirements specified in 13 C.C.R. § 2485	Energy
RR-EN-2	Compliance with CARB Off-Road Diesel Regulations as required by 23 C.C.R. § 2449	Energy
RR-GEO-1	Compliance with most recently adopted building codes	Geology and Soils
RR-GHG-1	Compliance with Measure I-2 of the AB 32 Scoping Plan	GHGs
RR-GHG-2	Compliance with the AB 32 Cap-and-Trade Program	GHGs
RR-GHG-3	Compliance with SJVAPCD Rule 2260 (Registration Requirements for Equipment Subject to California's Oil and Gas Regulation)	GHGs
RR-GHG-4	Compliance with SJVAPCD Rule 4409 (Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities)	GHGs
RR-GHG-5	Compliance with federal New Source Performance Standards specified in 40 CFR Part 60	GHGs
RR-GHG-6	Compliance with California Emission Standards for Off-road Compression-Ignition Engines as specified in 13 C.C.R. § 2423(b)(1).	GHGs
RR-HAZ-1	Compliance with 14 C.C.R. § 1774.2, which requires a Pipeline Management Plan	Hazards and Hazardous Materials
RR-HAZ-2	Compliance with all Kern County Fire Codes	Hazards and Hazardous Materials
DF-HYDRO-1	Water used for drilling and dust suppression during construction would be obtained from the Belridge Water Storage District through a nearby operator and delivered by truck.	Hydrology/Water Quality
DF-HYDRO-2	The Project would involve construction of an earthen well pad but graded prior to drilling	Hydrology/Water Quality
RR-HYDRO-1	Compliance with stormwater discharge requirements as specified in 40 C.F.R. §122.26(c)(1)(iii)	Hydrology/Water Quality

RR-HYDRO-2	Bidr will obtain coverage under the Construction General Permit (Construction General Permit Order 2009-0009-DWQ, as amended by 2010-00014-DWQ and 2012-0006-DWQ) in advance of construction activity, if required	Hydrology/Water Quality
DF-UTL-1	Waste generated during drilling of the well would be trucked offsite for disposal in an approved landfill	Uties and Service Systems
DF-UTL-2	Soil cuttings and water generated during the well installation will be stored onsite pending waste profile analysis	Utilities and Service Systems

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SECTION 3 Initial Study Environmental Checklist

This checklist has been prepared to document CalGEM's evaluation of the proposed Project and the determination of the appropriate level of environmental review under CEQA. The checklist used for the environmental evaluation was adapted from the environmental checklist form presented in Appendix G of the CEQA Guidelines. A discussion is provided for each environmental issue identified in the checklist.

For this checklist, the following designations are used:

- ***No Impact.*** The Project would not have any measurable environmental impact on the environment.
- ***Less Than Significant Impact.*** The Project may have the potential for affecting the environment, although these impacts will be below levels or thresholds that CalGEM, Kern County, or other responsible agencies consider to be significant.
- ***Less Than Significant Impact with Mitigation.*** The Project may have the potential to generate impacts that will have a significant impact on the environment. However, the level of impact may be reduced to levels that are less than significant with the implementation of mitigation measure(s).
- ***Potentially Significant Impact.*** The Project may result in environmental impacts that are significant and cannot be reduced to levels that are less than significant even with the implementation of mitigation measures.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is "Less Than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural or Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Energy
☒ Geology/Soils	☐ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials
☒ Hydrology/Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☒ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities/Service Systems	☒ Wildfire	☒ Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date_____

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3.1 Aesthetics

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Environmental Setting and Baseline

The Project Area is located adjacent to the existing McDonald Anticline and Carneros Creek Oil Fields. The Project Area does not contain scenic vistas, scenic resources, or historic elements. There are no State Scenic Highways in the vicinity to the Project Area; there are no designated scenic highways in Kern County (Caltrans 2019).

Environmental Assessment

a, b) As noted above, there are no scenic vistas, scenic resources or scenic highways on the Project Area or vicinity and the Project Area is not visible from any of these resources; therefore, there would be ***no impact*** to scenic vistas or state scenic highways.

c) The Project is on private land and is not a designated scenic resource. The Project Area is not visible to the public from any major or secondary highways or roadways and is over one mile from the nearest residences. The Project is located adjacent to active oil fields. The new well pad and well would have the same visual characteristics as those already present. Therefore, there would be ***no impact*** to the existing visual character or quality of public views of the site.

d) Construction and operation activities would be typical of those already present at an active oil field. Lighting may be used during construction activity but would be removed following construction at any given drill site. The nearest residents and public roadways to the Project Area are over one mile away; therefore, while nighttime lighting may be visible, any effects would be minimal and temporary. No permanent nighttime lights would be installed at the well pad site. There would be no new source of nighttime lighting. Therefore, there would be ***less than significant impacts*** regarding light and glare.

3.2 Agriculture and Forestry Resources

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the CARB. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting and Baseline

The Project Area is adjacent to the existing McDonald Anticline and Carneros Creek Oil Fields on land mapped as "Grazing Land" on the Farmland Mapping and Monitoring Program of the California Resources Agency maps (CDOC 2022a). The Project Area is zoned as Exclusive Agriculture (A). Oil production is a permitted use under this designation, pursuant to Chapter 19.98 of the Kern County Zoning Ordinance (Kern County 2021), although no permitting by Kern County for oil and gas activities under this ordinance has occurred since the stay on January 26, 2023. The proposed well is within a Tier 2 Oil Conformity zone. The Kern County Zoning Ordinance designates Oil Conformity Tier 2 to "areas that are classified Exclusive Agriculture (A) or Limited Agriculture (A-1) Districts, have agriculture as the primary surface land use, and are not included in Tier 1." (Kern County 2021).

The Project Area does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Adjacent parcels of land are enrolled in a nonprime Williamson Act Contract (Figure 5; Kern County 2023). However, the area for this Project is not enrolled in Williamson Act contracts.

The Project Area does not contain forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).

Environmental Assessment

a) The Project Area does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. As such, ***no impact*** to these agricultural resources would occur.

b) The well that is proposed for drilling is not located on Williamson Act Contract lands. Therefore, ***no impact*** to existing agricultural zoning, uses, or Williamson Act contracts would occur.

c, d) The Project Area does not contain forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)). As such, ***no impact*** to such forest/timber resources would occur.

e) All potential impacts would be limited to the Project Area itself. No disturbance would occur outside of the Project Area. There is no farmland or forest land in the Project vicinity that would be converted by the proposed Project. Therefore, ***no impact*** would occur.

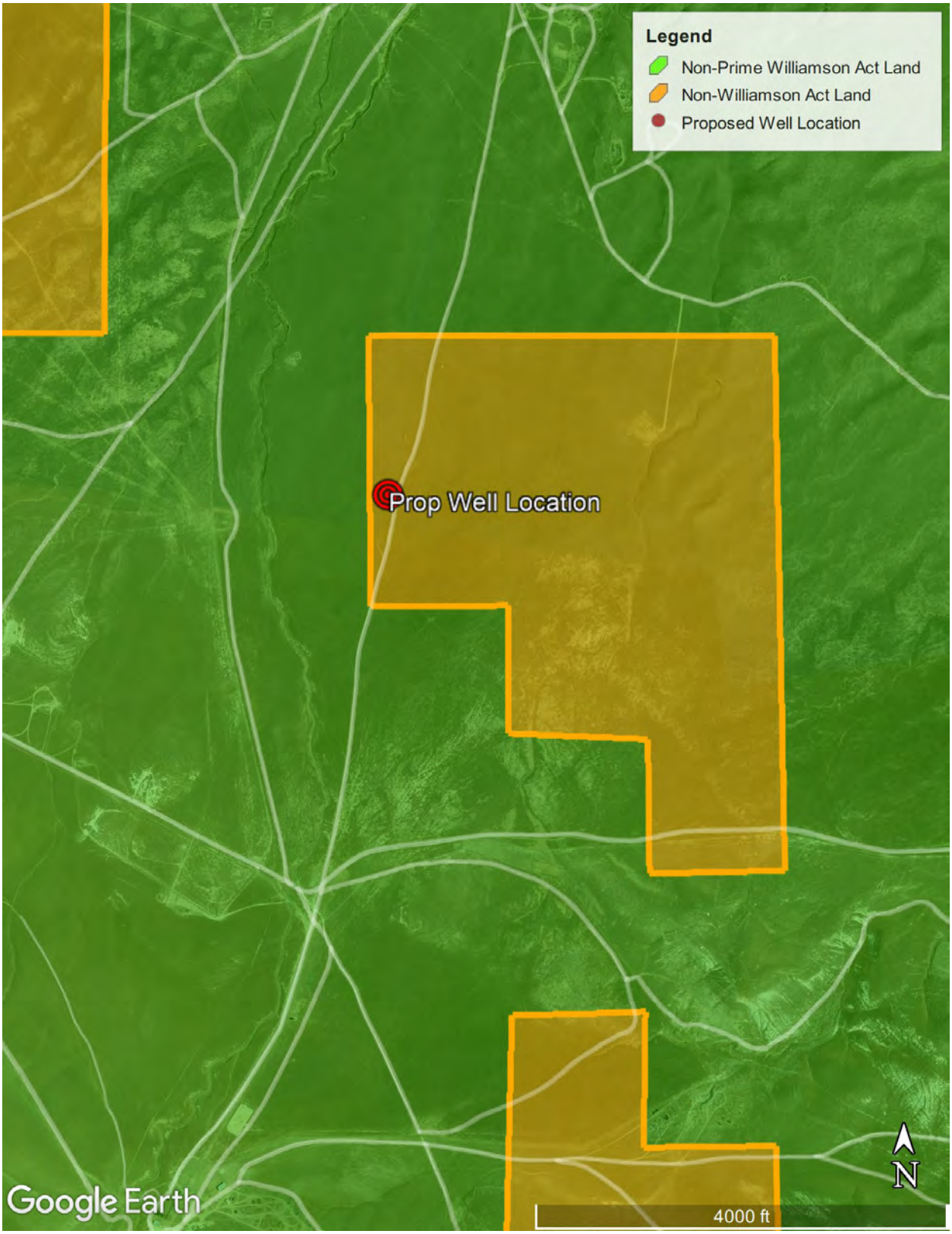

Figure 5 - Williamson Act Contract Areas and Proposed Well Location (created November 16, 2023)

3.3 Air Quality

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Environmental Setting and Baseline

The Project Area is located within the San Joaquin Valley Air Basin. At the state level, air regulatory duties lie with the California Air Resources Board (CARB) and at the federal level with the U.S. Environmental Protection Agency (EPA), Region 9.

The federal Clean Air Act (CAA), as amended, and the California CAA contain the primary provisions relating to air quality. The EPA, CARB, and regional air districts have issued rules to implement federal and state CAAs. EPA uses "criteria pollutants" as indicators of air quality and has established for each of them a maximum concentration above which adverse effects on human health and the environment may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). One set of limits (primary standard) protects health; another set of limits (secondary standard) is intended to prevent environmental and property damage. Under the federal CAA, the EPA has established NAAQS for seven criteria pollutants: ozone, respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide, lead, and sulfur dioxide (SO_2). California has established state Ambient Air Quality Standards for the same criteria pollutants, plus an additional three pollutants

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(visibility reducing particulates, sulfates, and hydrogen sulfide (H_2S)). States may have standards that are more restrictive than the federal thresholds, but they cannot be less restrictive. Although more stringent, the State standards have no specific dates for attainment, unlike federal standards. Under State law, designations are made by pollutant, rather than by averaging time. A geographic area that meets or exceeds the primary standard is called an attainment area; areas that do not meet the primary standard are called nonattainment areas. Table 3.3-1 shows the attainment status of the San Joaquin Valley Air Basin for the state and federal standards. As shown in the table, the San Joaquin Valley Air Basin currently exceeds California Ambient Air Quality Standards for ozone, $PM_{2.5}$, and PM_{10}. The basin also currently exceeds NAAQS for ozone and $PM_{2.5}$ (SJVAPCD 2023). The air basin has been designated as a federal maintenance area for PM_{10}.

Table 3.3-1 California and National Ambient Air Quality Standards

Pollutant	Averaging Period	California Standard	Federal Standard	Attainment Status	
				California	Federal
Ozone (O_3)	1 hour	0.09 ppm (180 µg/m³)	revoked	Nonattainment/Severe	--
	8 hours	0.070 ppm (137 µg/m³)	0.07 ppm (137 µg/m³)	Nonattainment	Nonattainment/ Extreme
Respirable Particulate Matter (PM_{10})	24 hours	50 µg/m³	150 µg/m³	Nonattainment	Attainment
	Annual	20 µg/m³	revoked	Nonattainment	--
Fine Particulate Matter ($PM_{2.5}$)	24 hours	none	35 µg/m³	Nonattainment	Nonattainment
	Annual	12 µg/m³	9 µg/m³	Nonattainment	Nonattainment
Carbon Monoxide (CO)	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	Attainment	Attainment
	8 hours	9 ppm (10 mg/m³)	9 ppm (10 mg/m³)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm (338 µg/m³)	0.100 ppm (188 µg/m³)	Attainment	Attainment
	Annual	0.030 ppm (56 µg/m³)	0.053 ppm (100 µg/m³)	Attainment	Attainment
Lead (Pb)	30 Day Average	1.5 µg/m³	--	Attainment	--
	Rolling three-month period, evaluated over a	--	0.15 µg/m³	--	Attainment

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Pollutant	Averaging Period	California Standard	Federal Standard	Attainment Status	
				California	Federal
	three-year period				
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm (655 µg/m³)	0.075 ppm (196 µg/m³)	Attainment	Attainment
	3 hours	--	0.5 ppm (1300 µg/m³)	--	Attainment
	24 hours	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)	Attainment	--
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (42 µg/m³)	--	Unclassified	--
Sulfates	24 hours	25 µg/m³	--	Attainment	--
Vinyl Chloride	24 hours	0.010 ppm (26 µg/m³)	--	Attainment	Unclassified
Visibility-Reducing Particles	8 hours	Extinction coefficient of 0.23 per kilometer (visibility of ten miles or more due to particles when relative humidity is less than 70 percent)	--	Unclassified	Unclassified

Notes: ppm = parts per million; ppb = parts per billion; mg/m³ = milligram per cubic meter; µg/m³ = micrograms per cubic meter; "--" = no standard.

The Project Area is within the EPA Pacific Southwest Region 9 Planning Area. A State Implementation Plan (SIP) has been prepared for the planning area, which identifies sources of emissions and control measures to reduce emissions. In 2022, CARB updated the State Strategy for achieving emissions reductions toward bringing the area into attainment with federal standards for ozone and $PM_{2.5}$.

District air quality plans that have recently been adopted and are relevant to the proposed Project include the SJVAPCD 2023 Maintenance Plan and Redesignation Request for the Revoked 1-Hour Ozone Standard, 2022 Plan for the 2015 8-Hour Ozone Standard, 2016 Plan for the 2008 8-Hour Ozone Standard, 2013 Plan for the Revoked 1-Hour Ozone Standard, 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards, and 2007 PM_{10} Maintenance Plan. These plans outline the strategy for achieving federal air quality standards by specific dates and identify control measures to reduce criteria pollutant

emissions. Control measures identified in the 2022 Plan for the 2015 8-Hour Ozone Standard reduce ozone precursor emissions, nitrogen oxides (NO_x), and Volatile Organic Compounds (VOCs). Particulate matter attainment strategies include control measures to reduce dust from unpaved roads and construction activities.

CAA regulations also address the release of hazardous air pollutants (HAPs): chemicals that are known or suspected to cause cancer or other serious health effects, such as reproductive effects, birth defects, or adverse environmental effects. Some compounds of this type are regulated as Toxic Air Pollutants by the State of California. The EPA currently lists 188 compounds as HAPs, some of which, such as benzene, toluene, and formaldehyde, can be emitted from oil and gas development operations. NAAQS have not been set for HAPs; rather HAP emissions are controlled by source type- or industrial sector-specific regulations. H_2S gas is not regulated under the NAAQS or as a HAP; however, it is known to be hazardous and is monitored for health and safety at oil and gas sites.

Once air quality attainment demonstration Plans are adopted, the reductions necessary to meet the respective reduction mandates contained in the Plan(s) are achieved through prohibitory rules created and enforced by the local air quality board/Air Pollution Control District. Compliance with applicable Rules, Regulations, and land use and zoning requirements ensures continued movement towards achieving the SJVAPCD attainment goals.

The following SJVAPCD rules applicable to the proposed Project are described below.

- *Rule 2201 (New and Modified Stationary Source Rule):* The purpose of this rule is to provide for the review of new and modified stationary sources of air pollution and to provide mechanisms including emissions trade-offs by which Authorities to Construct such sources may be granted without interfering with the attainment and maintenance of ambient air quality standards and to ensure no net increase in emissions above specified thresholds from new and modified stationary sources of all nonattainment pollutants and precursors. (See **RR-AIR-1**.)
- *Rule 2010 (Authority to Construct and Permit to Operate):* The purpose of this rule is to require any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate. (See **RR-AIR-2**.)
- *Rule 2280 (Portable Equipment Registration):* Certain portable emissions units would be required for well drilling, service or workover rigs, pumps, compressors, generators, and field flares. (See **RR-AIR-3**.)
- *Rule 4101(Visible Emissions):* The purpose of this rule is to prohibit the emissions of visible air contaminants to the atmosphere. (See **RR-AIR-4**.)
- *Rule 4623 (Storage of Organic Liquids):* The purpose of this rule is to limit VOC emissions from the storage of organic liquids. (See **RR-AIR-5**.)

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- *Regulation VIII (Fugitive PM_{10} Prohibitions):* The purpose of Regulation VIII is to reduce ambient concentrations of particulate matter (PM_{10}) by requiring actions to prevent, reduce, or mitigate anthropogenic fugitive dust emissions. Regulation VIII rules pertinent to the proposed Project include, but are not limited to, the following:
    - *Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities):* This rule limits fugitive dust emissions (PM_{10}) from construction, demolition, excavation, extraction, and other earthmoving activities. This rule applies to any such activity and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on-site, and travel on access roads to and from the site. (See **RR-AIR-6**.)
    - *Rule 8031 (Bulk Materials):* The purpose of this rule is to limit fugitive dust emissions from the outdoor handling, storage, and transport of bulk materials. (See **RR-AIR-7**.)

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a) The SJVAPCD has established thresholds of significance for criteria pollutant emissions during construction and operations, which are based on the SJVACPD's New Source Review offset requirements for stationary sources. Per SJVACPD guidance, a project would be determined to have a significant impact on air quality if the emission sums exceed the thresholds presented in Table 3.3-2.

Table 3.3-2 SJVAPCD Air Quality Significance Thresholds

Pollutant	Emissions (tons per year)	
	Construction	Operational per Lease Area
NO_x	10	10
SO_X	27	27
PM_{10}	15	15
$PM_{2.5}$	15	15
CO	100	100
ROG (VOC)	10	10

Source: SJVAPCD 2015a

For the purposes of this analysis, short-term construction emissions and long-term operational emissions were determined utilizing the latest version of the CalEEMod model (version 2022.1) based on the assumptions described in Section 2, Project Description. All portable off-road construction diesel engines are registered under CARB's Statewide Portable Equipment Registration Program and meet California Emission Standards for Off-road Compression-Ignition Engines as specified in California Code of Regulations (C.C.R.), Title 13, section 2423(b)(1). All off-road mobile construction equipment will be at least Tier 2. The proposed equipment listing is in Appendix A.

For this analysis, it is assumed that the well pad, well, and ancillary equipment are installed in a single year. The calculated unmitigated and mitigated emissions associated with construction of the Project are provided in Table 3.3-3. The emissions are calculated assuming that one well would be drilled with subsequent construction of associated ancillary facilities (i.e., installation of flowlines, electrical, and pumping units) and provide total emissions in tons per year for the proposed activity. Further, to ensure that construction emissions remain below the emissions thresholds specified in Table 3.3-2, Bidr would require that all portable off-road construction diesel engines are registered under CARB's Statewide Portable Equipment Registration Program and that all off-road mobile construction equipment meet Tier 2 or better. Bidr would also develop and implement a Fugitive Dust Control Plan for the Project in compliance with SJVAPCD fugitive dust suppression regulations. Accordingly, Table 3.3-3 also provides the mitigated construction emissions for the Project.

The annual emissions associated with operation of the well are presented in Table 3.3-4. Emissions from Project operation and maintenance were modeled utilizing CalEEMod assuming that the well head pump will be powered by either recovered gas supplying a permit-exempt electric generator (less than150 kW/day) or a permit-exempt well head engine powered by produced gas or commercial propane (Appendix A).

Table 3.3-3 Construction Criteria Pollutant Unmitigated and Mitigated Emissions

Pollutant	Unmitigated Construction Emissions (Tons/Year)*	Mitigated Construction Emissions (Tons/Year)*	Above SJVAPCD Threshold?
NO_x	2.71	2.71	No
SO_X	.0052	.0052	No
PM_{10}	13.51	13.51	No
$PM_{2.5}$	1.44	1.44	No
CO	1.98	1.98	No
ROG	0.14	0.14	No

Source: Refer to Appendix A, CalEEMod 2023 Emissions Data, for CalEEMod assumptions used in this analysis.

Notes: * As per the SJVAPCD 2015, a minimum of Tier 2 is used. But CalEEMod cannot calculate a scenario where only no Tier 1 engines are used. As there would be limited equipment used as part of this project, Tier 2 equipment might be used for both the unmitigated and the mitigated scenarios. Therefore, the highest emissions levels are used for both cases from the Air Quality Appendix A to determine significance.

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Table 3.3-4 Operational Criteria Pollutant Unmitigated and Mitigated Emissions

Pollutant	Unmitigated Operational Emissions (Tons/Year)	Mitigated Operational Emissions (Tons/Year)	Above SJVAPCD Threshold?
NO_x	0.54	0.54	No
SO_X	0.03	0.03	No
PM_{10}	0.12	0.12	No
$PM_{2.5}$	0.09	0.09	No
CO	0.90	0.90	No
ROG	0.28	0.28	No

Source: Refer to Appendix A, CalEEMod 2023 Emissions Data, for CalEEMod assumptions used in this analysis.

Operation of the well would not exceed the SJVAPCD Operational Emissions thresholds. As described in Table 2.6 and Section 3.1, several SJVAPCD rules would minimize air quality impacts, such as Rules 2201 (**RR-AIR-1**), 2010 (**RR-AIR-2**), 2280 (**RR-AIR-3**), 4101 (**RR-AIR-4**), 4623 (**RR-AIR-5**), 8021 (**RR-AIR-6**), and 8031 (**RR-AIR-7**). For example, compliance with Regulation VIII (**RR-AIR-6** and **RR-AIR-7**) would minimize particulate emissions by watering unpaved access roads in the Project Area and watering soils prior to excavation and trenching and during backfilling while compacting. Implementation of the existing regulatory mechanisms would further minimize the increase in potential emissions related to the operation of the proposed Project. Accordingly, assuming full compliance with the regulatory requirements detailed above the Project would not emit criteria pollutants above the SJVAPCD's established thresholds (Table 3.3-2) and would comply with SJVAPCD permit requirements. The operation of the well would not conflict with or obstruct implementation of the applicable air quality plan and impacts would be ***less than significant***.

b) The Project would emit criteria pollutants from the use of combustion sources such as diesel drills and completion/workover rig engines, drill pad construction equipment (e.g., dozers, backhoe, grader, etc.), equipment trucks, water trucks, drill rig crew trucks/vehicles, and portable lift equipment; through venting or fugitive losses from use of chemicals; or valves and fittings, pumps, compressors; and the well head. Impacts to air quality would occur also during Project construction as a result of soil disturbance and fugitive dust emissions.

Although the San Joaquin Valley Air Basin is in non-attainment for ozone, $PM_{2.5}$, and PM_{10}, Project construction would not generate emissions above the SJVAPCD thresholds. Additionally, Project operational and maintenance emissions would not result in a net increase in emissions due to compliance with Rule 2201. Therefore, the Project would have ***less than significant impact*** on cumulatively considerable pollutant increases.

c) The nearest sensitive receptors to the Project Area are over one mile from the nearest well, as shown in Figure 2. As shown in Table 3.3-3, construction emissions would be below the SJVAPCD threshold. Operations would result in emissions associated with operation and maintenance of the well. The risk associated with the project for sensitive receptors, including residences, businesses, and schools, was calculated using the SJVAPCD "Prioritization Calculator," as shown in Exhibit J of the Air Quality Impact Analysis found in Appendix A. The calculator was developed by SJVAPCD using the California Air Pollution Control Officers Associations' (CAPCOA) methodology. The prioritization calculation evaluated the impacts to receptors for the identified toxic substances. The toxic substances associated with this Project include diesel exhaust emissions for both the construction and operational phases. The diesel PM10 exhaust emissions were calculated using CalEEMOD.202.4.0 and the results were input into the model. The air quality impact of the proposed Project is not likely to affect the nearest receptors. The results of the "Prioritization Calculator," based on the receptor distances, is less than 10. Based on the receptor proximity and proximity factors, the calculated Total Max Score was 0.697 for receptors greater than 2,000 meters. As such, impacts to sensitive receptors would be ***less than significant***.

d) The Project may create odors during construction and operation activities. However, the nearest residential receptor is over one mile from proposed Project construction, operation, and maintenance activities. Diesel fuel would be used in trucks and construction equipment. Diesel fuel is considered an objectionable odor; however, Project construction activities are temporary and mobile in nature and would not be located adjacent to any single receptor for long periods of time. Further, California ultralow sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight would be required to be used in all diesel-powered equipment, which would minimize emissions of sulfurous gases (SO_2, H_2S, carbon disulfide, and carbonyl sulfide) and, thus, would minimize odors during Project construction. Therefore, due to the temporary and mobile nature of Project construction, as well as the limited amount of time and equipment required for Project construction activities, impacts associated with objectionable fumes and odors caused by combustion of diesel fuel would be ***less than significant***.

Operation of the Project would include an odor source such as a production well. During Project operation, potential sources of odor are fugitive emissions from the flanges, pressure relief devices, and other connections associated with the wellheads. As a result, there may be a potential increase in odors from the Project Area compared to the baseline. In the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015b), oil and gas production facilities are not included in the list of common facilities that are likely to have potentially significant odor emissions. However, the SJVAPCD recommends an approach for evaluating Project-specific odor impacts based on SJVAPCD complaint records, and a screening level analysis. Specifically, the SJVAPCD recommends that their Compliance Department be contacted to request information on odor compliance logged for the facility (if existing), for the previous three years. If the facility is not identified in the District's Compliance Database nor does it currently exist,

the odor analysis will be based on review of odor complaints for "similar facilities." Per the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts, significant odor problems are defined as:

- More than one confirmed complaint per year averaged over a three-year period; or
- Three unconfirmed complaints per year averaged over a three-year period.

Accordingly, odor complaint records for "similar facilities" (i.e., oil field operations) for years 2019 through July 2023 were provided by the SJVAPCD and reviewed as part of the screening analysis. Complaints associated with refining facilities were excluded from the review as not representative of proposed Project operations. The SJVAPCD odor complaint records were provided for permitted and non-permitted activities. For oil field operations, permitted equipment used for crude oil and natural gas production and processing has a potential to release odors. During operations, odors from leaking or venting components are possible. This potential is minimized by the implementation of **RR-AIR-8**, compliance with LDAR practices in accordance with SJVAPCD and CARB regulations. Tanks are constructed at a minimum to include pressure-vacuum relief valves set to within 10 percent of the designed tank working pressure, minimizing odor emissions. Furthermore, tanks are potentially required to be constructed with vapor recovery systems in accordance with SJVAPCD and CARB regulations. Non-permitted activities with a potential to release odors consist mainly of on-road travel and well maintenance. During well maintenance, a fluid is normally introduced into the well bore, and the hydraulic pressure exerted by the fluid prevents gas from escaping into the atmosphere. Diesel-fueled trucks traveling on local roadways would produce exhaust odors that could be considered offensive to some individuals. Although, in general, odors associated with diesel fumes are temporary and disperse rapidly with distance from the source, exposure of receptors to objectionable odor emissions from mobile sources represent an unavoidable nuisance.

During the period from 2019 through July 2023, there were a total of 26 complaints associated with permitted oil field equipment (excluding refining facilities) within the entire SJVAPCD jurisdiction. Of the 26 total complaint records associated with permitted equipment, seven were confirmed and resulted in a Notice of Violation and the other 19 were either unconfirmed or were resolved with no violation. Two of the seven complaints that resulted in a Notice of Violation were associated with one specific odor event that occurred on July 13, 2022. The number of unconfirmed complaints exceeds the threshold of significance (more than three unconfirmed complaints averaged over a three-year period). The number of confirmed complaints is also greater than three total complaints over the three-year period of record. Of the 16 unconfirmed complaints, seven were associated with a single odor event on February 19, 2021. The nearest complaint to the Project Area was in the city of Lost Hills approximately 12 miles northeast. The screening analysis indicates that operation of permitted and non-permitted oil field operations may result in an appreciable concentration of emissions of odorous compounds. However, any emission of odorous compounds that may be associated with the Project is not

expected to be perceptible at the nearest sensitive receptor more than one mile from Project activities given distance and dispersion. In addition, as noted above, the operation of permitted equipment used for crude oil and natural gas production and processing is potentially subject to SJVAPCD and CARB LDAR and tank emission control requirements. Accordingly, through compliance with applicable Leak Detection and Repair requirements (**RR-AIR-8**) as well as New Source Performance Standards found in 40 CFR Part 60 (**RR-GHG-5**) in addition to the distance of Project activities from any potential receptors of more than one mile, the potential for odors resulting from Project operations to adversely affect a substantial number of people would be ***less than significant***.

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3.4 Biological Resources

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Environmental Setting and Baseline

A biological technical report was prepared for the Project (Padre Associates 2023a) and is included as Appendix B to this IS. The query for Carneros Rocks and eight surrounding United States Geological Survey (USGS) 7.5-minute quadrangles within the San Joaquin Valley (Las Yeguas Ranch, Shale Point, Blackwells Corner, Lost Hills, Belridge, Reward, McKittrick Summit, and Simmler) of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Data Base, California Native Plant Society (CNPS)

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Rare Plant Inventory List, United States Fish and Wildlife Service's (USFWS) Information for Planning and Conservation planning tool, and USFWS Critical Habitat Report indicates that various special status species have been recorded in the vicinity of the Project Area (Tables 3.4-1 and 3.4-2). There is no designated critical habitat in the Project Area or vicinity. The detailed Biological Technical report is included in Appendix B.

Table 3.4-1 Plant Species with Potential to Occur in the Proposed Project Area

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Probability of Occurrence
Allium howellii var. *howellii* Howell's onion	-/4.3	Valley and foothill grassland, grassy slopes; sometimes within clay or serpentinite soils; 50-2200 m.	Mar-Apr	Low– No records of the species within the Project's quad. Clay soil is present in the Project Area. There is a record of the species 9 miles northwest of the Project (Calflora, 2023).
Amsinckia furcata Forked fiddleneck	-/4.2	Cismontane woodland, valley and foothill grassland, semi-barren loose, shaly slopes; 50-1000 m.	Feb-May	Low – Potential habitat is present. No recorded occurrences within the Project quad. The nearest occurrence is in the Carrizo Plain National Monument.
Androsace elongate ssp. *acuta* California androsace	-/4.2	Slopes within Chapparal, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, foothill woodland; 150-1305 m.	Mar-Jun	Absent – No recorded observations within the Project Area or quad. Records of the species are primarily in areas with foothills.
Antirrhinum ovatum Oval-leaved snapdragon	-/4.2	Chapparal, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland, on gentle and open slopes, disturbed areas, sometimes gypsum, often in alkaline soils and sometimes in clay soils; 200-1000 m.	May-Nov	Moderate – There is a record of this species 4.8 miles north of the Project Area (CCH1, 2023). Clay soil is present. Slopes are not present within the Project Area but are in the surrounding area.
Atriplex coronata var. coronata Crownscale	-/4.2	Chenopod scrub, valley and foothill grassland, vernal pools, alkaline and clay soils; 1-590 m.	Mar-Oct	Low – Multiple occurrences near McKittrick, Reward and Lost Hills. Clay soils and grassland habitat are present, however, no records within Project location or quad.
Atriplex coronata var. vallicola Lost Hills crownscale	-/1B.2	Chenopod scrub, valley and foothill grassland, freshwater wetlands, dry ponds, alkaline soils; 50-635 m.	Apr-Sep	Absent – Wetlands, vernal pools/ponds are not present within the Project Area. No occurrences of species in Project quad.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Probability of Occurrence
Atriplex flavida Carrizo Plain crownscale	-/1B.3	Chenopod scrub, valley and foothill grassland, vernal pools in alkaline soils; 585-605 m.	Mar-Jul	Absent – No records of this species in Kern County. Project Area is not within elevation range for the species.
Canbya candida White pygmy-poppy	-/4.2	Joshua tree woodland, desert scrub, pinyon and juniper woodland in granitic, gravelly and sandy soils; 600-1450 m.	Mar-Jun	Absent – Habitat is not present within the Project Area. Project Area is outside of the elevation range for the species.
Caulanthus californicus California jewelflower	FE, SE/1B.1	Chenopod scrub, valley and foothill grassland, pinyon and juniper woodland, flats, slopes, within non-alkaline, sandy substrate; 61–1000 m.	Feb-May	Low – No records within Project quad. Grassland habitat is present. Records near Lost Hills, Carrizo Plain, and McKittrick.
Caulanthus lemmonii Lemmon's jewelflower	-/1B.2	Pinyon and juniper woodland, valley and foothill grassland; 80-1580 m.	Feb-May	Low – No records within the Project Area or quad. Habitat is present. Records within the McKittrick Summit and Reward quads.
Clarkia xantiana ssp. *parviflora* Kern Canyon clarkia	-/4.2	Chenopod scrub, cismontane woodland, valley and foothill grassland, roadsides, slopes, rocky and sandy soils; 700-3620 m.	May-Jun	Absent – Project is outside of elevation range for species.
Delphinium recurvatum Recurved larkspur	-/1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland; within alkaline substrate; 3-790 m.	Mar-June	Moderate – Habitat present. However, requires poorly drained, fine, alkaline soils and *Atriplex* scrubs (Jepson, 2023). Project Area has non-alkaline soils and no *Atriplex* scrubs.
Eremalche parryi ssp. *kernensis* Kern mallow	FE/1B.2	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland; dry, open sandy to clay soils; often at edge of balds; alkali flats; 70-1290 m.	Jan-May	Moderate – Species record 8 miles southeast of Project Area, and various records near Belridge. Project Area has clay soils and grassland. No records within Project location or quad.
Eriastrum hooveri Hoover's eriastrum	FD/4.2	Chenopod scrub, valley and foothill grassland, pinyon juniper woodland; within alkaline gravelly substrate; 50-915 m.	Mar-July	Low- No gravelly substrate observed within the Project Area. No records within the Project quad, but multiple records in surrounding quads.
Eriogonum gossypinum	-/4.2	Chenopod scrub and valley and foothill	Mar-Sep	Moderate – Grassland habitat and clay substrate is present. Record of

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Probability of Occurrence
Cottony buckwheat		grassland within clay substrate; 100-550 m.		species 2.7 miles east of the Project Area.
Eriogonum nudum var. indictum Protruding buckwheat	-/4.2	Chaparral, chenopod scrub, cismontane woodland in clay and serpentinite soils; 150-1463 m.	May-Oct	Absent – Habitat is not present within the Project Area.
Eriogonum temblorense Temblor buckwheat	-/1B.2	Valley and foothill grassland, clay and sandstone; 300-1000 m.	May-Sep	Absent– Grassland habitat and clay soil are present within the Project Area. Multiple records in Carneros Rock quad near Carneros Canyon. However, records are in hillier areas.
Eryngium spinosepalum Spiny-sepaled button-celery	-/1B.2	Valley and foothill grassland, usually occurs in wetlands, vernal pools; 80-975 m.	Apr-Jun	Absent – Wetlands are not present within the Project Area. Quad with nearest record is in Simmler.
Eschscholzia hypecoides San Benito poppy	-/4.3	Chaparral, cismontane woodland, valley and foothill grassland, grassy areas in woodlands and chaparral, clay and serpentine soils; 200-1500 m.	Mar-Jun	Absent – Project is outside of the California Floristic Province, Inner South Coast Ranges, in which the species is found.
Eschscholzia lemmonii ssp. *kernensis* Tejon poppy	-/1B.1	Chenopod scrub, valley and foothill grassland; 160-1000 m.	Mar-May	Absent – Project is outside known range of Western Transverse Ranges and Tehachapi Mountain area (Jepson eFlora, 2023). No records within the Project Area.
Eschscholzia rhombipetala Diamond-petaled California poppy	-/1B.1	Valley and foothill grassland in alkaline and clay soils; 0-975 m.	Mar-Apr	Absent – No records within the Project Area or quad. Records are within the foothills of the Coast Range.
Fritillaria agrestis Stinkbells	-/4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland, clay and serpentine (sometimes) soils; 10-1555 m.	Mar-Jun	Absent – Outside of the known range (Calflora 2023).
Lasthenia chrysantha Alkali-sink goldfields	-/1B.1	Vernal pools, alkaline; 0-200 m.	Feb-Apr	Absent – No habitat is present within the Project Area. Project is outside of elevation range for the species.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Probability of Occurrence
Lasthenia ferrisiae Ferris' goldfields	-/4.2	Vernal pools, wetlands usually in alkaline or clay substrate; 20-700m	Feb-May	Absent – No wetland habitat present, not reported within general area. None have been observed within the Project Area.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	-/1B.1	Playas, marshes and swamps, vernal pools, coastal salt marsh, freshwater wetlands, alkali sink, wetland-riparian; 1-1220 m.	Feb-Jun	Absent – No wetland habitat present, not reported within general area. None have been observed within the Project Area.
Layia heterotricha Pale-yellow layia	-/1B.1	Cismontane woodland, coastal scrub. Pinyon and juniper woodland, valley, and foothill grasslands, sometimes in alkaline or clay substrate; 300-1705m	Mar-Jun	Absent – Outside of the known range (Calflora, 2023).
Layia munzii Munz's tidy-tips	-/1B.1	Chenopod scrub, valley and foothill grassland in alkaline clay soils; 150-700 m.	Mar-Apr	Absent – No records within Carneros Rocks (Project) quad. Alkaline soil is not present within the Project Area. Grassland and clay soil present within the Project Area.
Lepidium jaredii ssp. jaredii Jared's pepper-grass	-/1B.2	Valley and foothill grassland in alkaline and adobe soils, washes and slopes, alluvial fans; 335-1005 m.	Mar-May	Absent – Project Area is within the geographic range for the species, but outside of the elevation range. Soil preference and microhabitat are not present.
Madia radiata Showy golden madia	-/1B.1	Cismontane woodland, valley and foothill grassland, grassy and open slopes; 25-1215 m.	Mar-May	Absent – Project is outside of the California Floristic Province, Inner South Coast Ranges, in which the species is found.
Monolopia congdonii San Joaquin woollythreads	FE/1B.2	Chenopod scrub and valley and foothill grassland in sandy soils; 60-800 m.	Feb-May	Moderate – Padre has observed a population of the species approximately 2.6 miles north of the Project.
Puccinellia simplex California alkali grass	-/1B.2	Chenopod scrub, meadow and seep, valley and foothill grassland, vernal pool, saline flats, and mineral springs; 2 – 930 m.	Mar- May	Absent – No habitat present. Occurs in saline flats, mineral springs which Project lacks. No recorded observations within the Project Area.
Stylocline citroleum Oil neststraw	-/1B.1	Open, stable, often crusted sand, clay, dry drainage edges, between *Atriplex* shrubs, chenopod scrub; coastal scrub; clay; 50-400 m.	March-April	Absent – Scrub habitat not present. No occurrences in the Project quad.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Probability of Occurrence
Trichostema ovatum San Joaquin bluecurls	-/4.2	Chenopod scrub and valley and foothill grassland; 65-320 m.	April-Oct	High- Habitat present. No occurrences in the Project quad. The closest occurrence is 21 miles east (CNDDB) A species in the same genus *T. lanceolatum* was observed during surveys at the Project. *T. ovatum* was not observed.

Listing Status/Rare Plant Rank Codes:

CCH = Consortium of California Herbaria
CNNDB = California Natural Diversity Database Info (CDFW)
FD = Federally delisted (USFWS)
FE = Federally listed Endangered (USFWS)
SE = State-listed Endangered (CDFW)

CNPS (California Native Plant Society) Codes, California Rare Plant Rank:
1B = Plants Rare, Threatened, or Endangered in California and Elsewhere
4 = Watch List: Limited Distribution
0.1 = Seriously Threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 = Fairly Threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

Source: Padre Associates 2023a

Table 3.4-2 Wildlife Species with Potential to Occur in the Proposed Project Area

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Invertebrates			
Branchinecta lynchi Vernal pool fairy shrimp	FT/-/-	Valley and foothill grassland, vernal pool, and wetland. Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains in astatic rain-filled pools. Inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Absent-No habitat present or reported within the general area. Project Area lacks vernal pools and wetlands.

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Bombus crotchii Crotch's bumblebee	-/SCE/-	The Sierra-Cascade crest west to the coast of California and south to Mexico. Live in shrublands and grasslands and nest underground. Food plants include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Lupinus, Saliva Eriogonum*, *Asclepias*, *Eschscholzia*, *Chaenactis, and Medicago* (Williams et al 2014).	Moderate- Food plant and associated genera are present within the general area of the Project Area. Nearest record is 8 miles south of the Project Area (CNDDB, 2023).
Danaus plexippus Monarch butterfly – California overwintering population	FCE/-/-	Overwintering population. Closed-cone coniferous forests along the coast from northern Mendocino to Baja California, Mexico. Roost in wind-protected trees groves of Eucalyptus, Cypress, and Monterey pine, with water and nectar nearby. Require flowering plants for adult food source and milkweed (*Asclepias* spp.) plants for egg laying and larva food source.	Low – Project Area is outside of winter range. Species could potentially migrate near the Project Area. No milkweed is present within the Project Area. None have been observed within the Project Area.
Euproserpinus euterpe Kern primrose sphinx moth	FT/-/-	Occurs only in association with its host plant, elderberry (*Sambucus* spp.) in which they lay their eggs on.	Absent – Outside of known range (USFSW, 2019).
Amphibians			
Ambystoma californiense California tiger salamander- central California DPS	FT/ST/WL	Require underground refuges, especially ground squirrel burrows as upland habitat for aestivation and vernal pools or other season water sources for breeding.	Absent – Project Area is east of the Central Valley range (border of San Luis Obispo and western Kern County). No aquatic habitat present.
Rana draytonii California red-legged frog	FT/-/SSC	Occurs in or near quiet permanent water of streams, marshes, ponds, lakes and other quiet bodies of water. In summer, frogs estivate in small mammal burrows, leaf litter, or other moist sites in or near (within a few hundred feet of) riparian areas.	Absent – Project Area is outside of the geographic range for this species. No aquatic habitat present.

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Spea hammondii Western spadefoot	-/-/SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands; vernal pools are essential for breeding and egg-laying.	Low – Grassland habitat is present with the Project Area. Project Area lacks vernal pools. Intermittent aquatic habitat could be present in the general area (Carneros Creek and other unnamed creeks). The closest record of this species is approximately 5.4 miles north of the Project from 2011 (CNDDB 2023). None have been observed within the Project Area.
Reptile			
Anniella alexanderae Temblor legless lizard	-/SCE/SSC	East of the Temblor Mountain Range in western Kern County and western Fresno County. They require loose soil, sand or leaf litter, within a variety of open habitats. They prefer soils with a high moisture content. Typically found in alkali desert scrub habitat (Center for Biological Diversity, 2021)	Low – Project Area is within the known range of the species. Potential habitat is present, however preferred habitat (alkali desert scrub) is not present within the Project Area but is found in the general area. Several ephemeral drainages run near the Project Area. Loamy soil may be present within the Project Area. Nearest record is 10 miles west of the Project Area (CNDDB 2023).
Anniella grinelli Bakersfield legless lizard	-/-/SSC	Found in the southern San Joaquin Valley; in the east side of the Carrizo Plain and within Bakersfield city limits. They occur in sparsely vegetated areas with moist, loose soil. Use leaf litter, rocks and logs for refuge.	Absent- Project Area is outside of known range of this species.
Arizona elegans occidentalis California glossy snake	-/-/SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. Generalists reported from a range of scrub and grassland habitats, often with loose or sandy soils.	Moderate – Potential habitat is present. Nearest record is 11 miles north of the Project Area from 2014 (CNDDB, 2023). None were observed on the Project Area.

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Emys marmorata northwestern pond turtle	-/-/SSC	Require aquatic habitats such as ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation below 6000 ft elevation. Require sites for basking and sandy banks or open grassy fields as upland habitat for egg-laying (up to .5 km from water).	Absent- Aquatic habitat is not present within the Project Area.
Gambelia sila Blunt-nosed leopard lizard	FE/SE/FP	Chenopod scrub; resident of sparsely vegetated alkali and desert scrub habitats in areas of low relief; seeks cover in mammal burrows, under shrubs or structures such as fence posts.	Moderate – Potential habitat is present; however, BNLL protocol-level surveys were conducted in 2023 and resulted in negative findings. BNLL are known to occur within 3 miles of the Project Area. The nearest record is on an access road 1.3 miles south of the Project Area from 2006. There are other records ranging from 1.9 to 4.4 miles from the Project Area along roads, from 2008-2013 (CNDDB 2023).
Masticophis flagellum ruddocki San Joaquin coachwhip	-/-/SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Requires mammal burrows for refuge and oviposition sites.	Moderate – Habitat present in and around the Project Area.
Phrynosoma blainvillii Coast horned lizard	-/-/SSC	Found in a wide variety of habitats such as alkali desert scrub, grassland blue oak woodland, but most common in lowlands along sandy washes with scattered low bushes. Require ant hills (specialized ant diet) with logs or rocks for basking and cover (Laudenslayer & Parisis, 2007).	Absent– Grassland habitat present. Specific habitat requirements are not present. The nearest record is 9.4 miles southwest of the Project Area.
Bird			
Agelaius tricolor Tricolored blackbird	-/ST/BLM S, SSC, RWL, BCC, MBTA	Highly colonial species. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony. Forages in agricultural fields and grassland habitat.	Absent – Foraging grassland habitat present; however, no suitable nesting habitat is present. No suitable water sources are present in or near the Project Area. The nearest CNDDB record is 4.5 miles northeast of the Project (CNDDB 2023).

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Aquila chrysaetos Golden eagle	-/-/FP, BE&GEPA, CMBPA	Rolling foothills, mountain areas, sage-juniper flats, and desert. Nests in large trees in open areas or canyons.	Moderate (Foraging)- The Project Area may be utilized as foraging habitat for golden eagle. Nesting habitat is not present within or near the Project Area.
Athene cunicularia Burrowing owl	-/-/BLM, SSC, CMBPA	Found in a variety of habitats. Open dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation in areas where fossorial mammals are already present.	High – Suitable habitat present. The nearest record is 10 miles north of the Project Area (CNDDB 2023).
Buteo swainsoni Swainson's hawk	-/ST/ CMBPA	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Moderate – Foraging habitat present; however, no nesting habitat was observed.
Charadrius montanus Mountain plover	-/-/SSC	Prefers short vegetation with bare ground and flat topography, prefers grazed areas with burrowing rodents in grasslands, plowed fields, grain fields and sod farms.	Moderate – Project is within wintering range and preferred habitat is present. The nearest record is approximately 10 miles north of the Project Area.
Charadrius nivosus nivosus Western snowy plover	FT/-/SSC	Needs gravelly, sandy or friable soils for nesting on sandy beaches, salt pond levees and shores of large alkali lakes.	Absent – Habitat is not present within the Project Area.
Empidonax traillii extimus Southwestern willow flycatcher	FE/SE/-	Riparian woodlands in southern California.	Absent – Habitat is not present within the Project Area.
Falco mexicanus Prairie falcon	-/-/WL	Dry, open habitats. Nests on cliffs. Forages far from breeding sites, even to marshlands and ocean shores.	Moderate (Foraging) – Nesting habitat is not present within or near the Project Area. The species could utilize the Project Area for foraging.
Gymnogyps californianus California condor	FE/SE/ FP, CMBPA	Requires large areas of remote country for foraging, roosting, and nesting. Roosts on large trees or snags or on isolated rocky outcrops and cliffs. Forages in open grasslands and oak savanna foothills.	Low – Foraging habitat is present. Nesting habitat is not present within the Project Area. Project Area is not in Critical Habitat for the species.

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Haliaeetus leucocephalus Bald eagle	-/-/FP, BE&GEPA, CMBPA	Requires large area with good food base, perching areas and nesting sites. Typically found nesting near rivers, lakes, and marshes. May be found foraging in dry areas such as farmland and urban habitat.	Absent – No habitat present.
Toxostoma lecontei Le Conte's thrasher	-/-/SSC	Desert wash and desert scrub; commonly nests in dense spiny shrub or densely branched cactus in desert wash.	Absent – Scrub habitat not Present with the Project Area.
Mammal			
Ammospermophilus nelsoni San Joaquin (Nelson's) antelope squirrel	-/ST/-	Western San Joaquin Valley from 200-1200 feet elevation. On dry, sparsely vegetated loam soils, dig burrows or use kangaroo rat burrows; need widely scattered shrubs, forbs, and grasses in broken terrain with gullies and washes.	High –Habitat is present within the Project Area. In 2023, Padre observed SJAS 2.5 miles north and 3.5 miles southeast of the Project Area, along access roads. There is a record of SJAS 0.77 miles from the Project Area from 1987 (CNDDB, 2023).
Antrozous pallidus Pallid bat	-/-/SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts need to be protected from high temperatures and are very sensitive to disturbance.	Low – Grassland habitat for foraging is present. Roosts sites are not present within Project Area, however, there is a nearby record approximately 2 miles southwest of the Project in a rocky area (CNDDB, 2023).
Dipodomys ingens Giant kangaroo rat	FE/SE/-	Grassland habitat on the western side of the San Joaquin Valley, marginal habitat in alkali scrub. Need level terrain and sandy loam soils for burrowing.	Low – Grassland habitat is present, and Project is within species range. No burrow precincts or other evidence of species' presence (caches, cleared plant litter around burrows) were observed at the site. The nearest record is 9.4 miles southwest of the Project from 2016 (CDFW, 2023).
Dipodomys nitratoides nitratoides Short-nosed kangaroo rat	-/-/SSC	Western side of San Joaquin valley in grassland and desert scrub (especially *Atriplex*) habitat. Friable soils, flat to gently sloping areas.	Moderate – Grassland habitat is present within the Project Area. Nearest record is approximately 10 miles east of the Project Area (CNDDB, 2023).

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Dipodomys nitratoides nitratoides Tipton kangaroo rat	FE/SE/-	Saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley.	Absent – No scrub habitat is present within the Project Area.
Eumops perotis californicus Western mastiff bat	-/-/SSC, WBWG:H	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, etc.; roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Low – No suitable roosting habitat present.
Sorex ornatus relictus Buena Vista Lake ornate shrew	FE/-/SSC	Marshlands and riparian areas in the Tulare Basin. Prefer moist soil and use stumps, logs and litter for cover.	Absent – Habitat is not present within the Project Area. The Project area is outside of the designated Critical Habitat for this species.
Taxidea taxus American badger	-/-/SSC	Found in many habitats. Most abundant in drier open stages of most shrubs, forest, and herbaceous habitats. Needs sufficient food and open areas. Preys on burrowing rodents and digs burrows.	Moderate – Suitable habitat is present within the Project Area. The nearest record is approximately 14 miles south of the Project Area (CNDDB, 2023).
Vulpes macrotis mutica San Joaquin kit fox	FE/ST/-	Chenopod scrub and valley and foothill grassland; annual grasslands or grassy open stages with scattered shrubby vegetation.	High – Habitat is present within the Project Area. There have been multiple records in the general area. The nearest record is 0.4 miles north of the Project form 1988. There is also a record 1.7 miles northeast from 1975 (CNDDB, 2023).

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Federal Status/State Status/Other Status Codes: BE&GEPA = Bald Eagle and Golden Eagle Protection Act CMBPA = California Migratory Bird Protection Act CNDDB = California Natural Diversity Database Info (CDFW) FE = Federally listed Endangered (USFWS) FP = Fully protected under Fish and Game Code (CDFW) FT = Federally listed Threatened (USFWS) FCE = Federally Candidate Endangered (USFWS) SE = State-listed Endangered (CDFW) ST = State-listed Threatened (CDFW SCE = State Candidate Endangered (CDFW) SSC= Species of Special Concern (CDFW) WL = State Watch List (CDFW) WBWG = Western Bat Working Group H = Highest priority			

Source: Padre Associates 2023a

The Project Area and vicinity potentially support sensitive fauna and flora known to occur in the region. Padre Associates conducted botanical surveys and protocol-level blunt-nosed leopard lizard surveys in 2023 at the Project Area. During the course of the surveys, no sensitive species were observed within the Project Area. Very few small mammal burrows were observed within the Project Area. No potential dens (San Joaquin kit fox, American badger) were observed during the surveys.

The Project Area consists of annual non-native grassland habitat and disturbed lands. No naturally occurring rivers, streams or lakes were observed within the Project boundaries. The nearest aquatic feature, Carneros Creek, is approximately 0.2-mile west of the Project. Carneros Creek is defined by the National Hydrology Dataset (NHD) as an intermittent steam/river and by the National Wetland Inventory (NWI) as an intermittent riverine feature. An intermittent system may contain flowing water for only part of the year. When water is not flowing it may remain in isolated areas or dry up completely (ERMA, 2023). There are several other flowlines and unnamed intermittent and ephemeral water features surrounding the Project Area. However, no Project activities are planned within any aquatic features. No disturbance or impact is anticipated to any of the above-mentioned aquatic features.

Suitable habitat for various sensitive species is present within the Project Area. Certain wildlife species such as San Joaquin kit fox, American badger, burrowing owl, or other bird species may use the area for foraging or passing through the site. The area

surrounding the oil field is suitable habitat for these species as they may occur in areas that are already disturbed and/or currently being used for human activities.

Environmental Assessment

a) The Project Area is located adjacent to an active oil field on previously non-native grassland and disturbed land. A review of the USFWS Critical Habitat Report search determined that no critical habitat occurs within or near the Project Area. Under Federal and State law, no incidental take of any species listed as threatened or endangered under the federal Endangered Species Act or California Endangered Species Act or rare or endangered in the California Native Plant Protection Act may occur unless the incidental take is authorized by applicable state and federal wildlife agencies in the form of a permit or other written authorization, an approved state or federal conservation plan, or in accordance with an approved regional plan such as a Habitat Conservation Plan (HCP) and/or Natural Community Conservation Plan (NCCP). As described above, a number of special status species have the potential to travel through or forage near the site. Implementation of **MM-BIO-1** through **MM-BIO-13** would ensure the potential for adverse effects are minimized. Therefore, potential impacts to special status species would be ***less than significant with mitigation***.

MM-BIO-1 Pre-Disturbance Survey A pre-disturbance biological survey will be conducted by a Qualified Biologist. A Qualified Biologist is defined as a person with a combination of academic qualifications (minimum of 4 years of university or college education in biological sciences, zoology, wildlife biology, ecology, botany, or environmental science), professional field experience conducting biological surveys, and demonstrated knowledge and skills (i.e., field experience) related to the species and habitats present on the Project Area and the specific focused or protocol-level surveys conducted. The purpose of the pre-disturbance biological surveys is to confirm the potential presence and/or absence of any protected status species listed as threatened or endangered under the federal Endangered Species Act, threatened or endangered under the California Endangered Species Act, or designated as fully-protected in the California Fish and Game Code, and to confirm the presence and/or absence of any non-protected status sensitive species considered under California Environmental Quality Act.

The pre-disturbance biological survey will consist of walking belt transects to accomplish 100% coverage of the Project Area plus a 500-foot buffer. Additionally, a 1,640-foot buffer will be surveyed specifically for burrowing owl burrows, in accordance with Recommended Non-Disturbance Buffers for Occupied Burrowing Owl Nesting Sites Based on Project Activity Impact Level (CDFW, 2012). All direct and indirect observations of special-status biological resources will be recorded using a handheld GPS and on field forms. Habitat will be evaluated by the Qualified Biologist to determine the potential for biological resource monitoring and/or surveys for species that are seasonal or require focused surveys during specified periods (e.g., special-status plants, blunt-nosed leopard lizard).

The pre-disturbance biological survey report will include a map of the proposed Project construction boundary, biological survey area, special-status species observations (when observed), areas of potential and/or occupied habitat (if any), areas identified for avoidance, and a list of all applicable mitigation measures that will be implemented for the respective project activity site.

MM-BIO-2 Monitoring A qualified biological monitor shall be on-site during all Project activities that have the potential to harm or impact special-status wildlife. Project activities that may require a biological monitor include but are not limited to vegetation removal and initial ground disturbance associated with well pad construction. When on-site, the biological monitor shall conduct a biological clearance survey of all work areas prior to the start of daily Project activities. The purpose of the clearance survey is to identify any biological resources (nests, dens, burrows) within the work areas that may have occurred since the last workday, any wildlife species within the work areas, and to inspect any exclusion areas and make sure they remain intact. In addition, the biological monitor shall monitor all vegetation removal and initial ground disturbance. Once activities that have the potential to harm or impact wildlife have been completed, daily biological monitoring will not be required. This determination will be left up to the discretion of the Qualified Biologist. The Qualified Biologist may conduct periodic inspections of Project activities to ensure measures are being implemented and no sensitive wildlife have moved into the area. Depending on the pre-disturbance biological survey, activities that will likely not require a biological monitor include drilling operations and Project operations. If at any time during Project activities any special-status wildlife species are observed within the Project Area, work around the animal's immediate area shall be stopped or work shall be redirected to an area within the Project Area that would not impact these species until the animal has left the area of its own volition. Listed species will not be handled or relocated and will be allowed to leave the Project Area unimpeded. Work would resume once the animal is clear of the work area. In the unlikely event a special-status species is injured or killed by Project-related activities, the biological monitor would stop work and notify Bidr and CalGEM and consult with the appropriate agencies to resolve the impact prior to re-starting work in the area. The biological monitor will keep notes of all species observed, compliance concerns if any, and work activities conducted in a daily monitoring log.

MM-BIO-3 Bird Nest Survey Active bird nest(s) will be avoided by establishing a minimum 250-foot non-disturbance buffer for passerine species, a minimum 500-foot non-disturbance buffer for non-listed raptor nest(s), or a minimum 0.5-mile non-disturbance buffer around any federal or state- listed raptor nest(s) until the breeding season has ended. Non-disturbance buffers can be removed when a Qualified Biologist has determined that the birds have fledged, are no longer reliant on the nest or parental care for survival and adult birds are no longer occupying the nest, or the nest is no longer active (e.g., failed). Reduced non-disturbance buffers may be implemented if a Qualified Biologist concludes that work within the buffer area will not be likely to cause disturbance to or abandonment of the nest (e.g., when the disturbance area is

concealed from a nest site by topography, when work activities will have a limited duration within the buffer area, or when the species has been known to tolerate higher levels of disturbance). If reduced non-disturbance buffers are implemented, a Qualified Biologist will monitor the active nest(s) before and during construction to establish a baseline for nest behavior and determine whether construction activities are adversely affecting the nest. If a reduced non-disturbance buffer is implemented, full-time biological monitoring of the nest will occur during construction activities. The pre-disturbance monitoring of the nest site will occur on at least two occasions of at least one hour each during anticipated work hours prior to construction to establish a behavioral baseline. If behavioral changes are observed, the work causing that change will cease within the buffer area until the nest has fledged or is determined by the Qualified Biologist to no longer be active. The Qualified Biologist shall have the authority to halt or redirect construction activities to protect nesting birds from project activities. Any reduction of buffer areas for State or federal listed species during the nesting season must be authorized by CDFW and/or USFWS.

MM-BIO-4 WEAP A Worker Environmental Awareness Program (WEAP) will be presented to all personnel that may access the Project Area, prior to beginning work on the Project Area. The WEAP training will be given by trained personnel (e.g., Qualified Biologist or assigned Company Environmental Specialists). WEAP trainings will cover an overview of the laws and regulations governing the protection of biological resources; a description of protected (i.e., FESA/CESA threatened, endangered, candidate, and other special status) species known to occur or with the potential to occur in the Project Area. The training would include a discussion of the sensitive and protected species and their biology and general behavior, distribution and habitat needs, sensitivity to human activities, and Project-specific protective measures. It will also discuss species status and legal protections, define what is habitat and disturbance, and present biological resource protection measures. Materials will be provided to assist workers in recognizing protected and sensitive species. The training will include avoidance and minimization measures to protect biological resources, the identification of environmentally sensitive areas and avoidance buffers, and how to report biological resources if observed on site. The training of personnel would be documented using sign-in sheets.

MM-BIO-5 San Joaquin Kit Fox If the pre-disturbance biological survey identifies the presence of any Potential, Atypical, Known or Natal San Joaquin kit fox (SJKF) dens, the following measures will be implemented and documented in the pre-disturbance biological survey report.

1. Potential kit fox dens will be clearly identified on project maps, marked in the field, and a 50-foot no work buffer will be demarcated using stakes and flagging or similar materials to prevent inadvertent damage to the potential den. Alternatively, if a potential den cannot feasibly be avoided at such distance, the den may be monitored and blocked or excavated in accordance with the Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to or during Ground Disturbance (USFWS, 2011). All potential dens that will be destroyed by a Project activity or ground disturbance will

be fully excavated after monitoring conducted by a Qualified Biologist shows that it is not occupied by a listed or otherwise protected species.

2. If kit fox activity or sign is detected at any den including atypical dens (e.g., pipes, culverts), the den location will be identified as a "known" kit fox den in accordance with USFWS guidelines (USFWS, 2011). A minimum 100-foot no work buffer from any disturbance area will be maintained for known dens.

3. During pupping season (January 1 through August 31 or until pups are no longer dependent on adults), a minimum 500-foot no work buffer (distance at which construction noise attenuates to approximately 60 dBA) from any disturbance area will be maintained from occupied natal dens.

4. No excavation (or other project-related destruction) of a known or natal den will occur without prior written guidance from USFWS.

5. All pipes (greater than 3.5 inches in diameter) used during project activities would be capped. Stored pipes greater than 3.5 inches that cannot be visually inspected to verify that no wildlife is present will need to be monitored by a Qualified Biologist prior to use or movement. All trenches and excavations would be covered or ramped (1:1 slope) prior to prevent wildlife entrapment.

6. If take (as defined in FESA and/or CESA) of SJKF cannot be avoided, Bidr shall consult with USFWS and/or CDFW to obtain necessary authorization and shall implement all associated conditions, including any required take avoidance or minimization measures, of such authorization. If den exclusion or destruction is permitted under FESA, a Qualified Biologist will supervise any such activity.

MM-BIO-6 San Joaquin Antelope Squirrel If the pre-disturbance biological survey identifies burrows within the Project Area that are characteristic of or may be used by San Joaquin antelope squirrel (SJAS), the following avoidance methods for SJAS would be implemented:

1. Pre-activity surveys for SJAS will occur prior to the start of ground disturbance using 10-30 meter spacing.

2. SJAS surveys will be conducted when temperatures range from 50-90˚F. If sunny conditions are not present, surveys would not be conducted if temperatures are below 60 degrees Fahrenheit.

3. Surveyors will scan the survey areas with binoculars and listen for vocalizations. Visual and audible observations will be recorded and mapped.

4. All active SJAS burrows shall be clearly marked with flagging or staking, and ground-disturbing activities shall observe a minimum 50-foot no work buffer from each active burrow. Avoidance of burrows may be achieved by moving the planned well pad so that it is not within 50-feet of any SJAS burrows.

5. In areas where SJAS have been observed, suspected to occur, or observed within 50 feet, three days of SJAS surveys during the appropriate temperatures are recommended, prior to the start of ground disturbance activities.

6. Vegetation clearing will be completed after three days of no SJAS observations.

7. All holes, trenches, and other openings with a one-inch or greater in diameter must be covered during the day unless workers are in the immediate area working. If covering holes is not feasible while workers are taking required breaks, then the monitoring biologist will walk the area to discourage SJAS from entering the work area until workers return. All holes must be covered overnight.

MM-BIO-7 Blunt Nosed Leopard Lizard Blunt-nosed Leopard Lizard (BNLL) protocol-level surveys were conducted for the Project Area in 2023 and resulted in negative findings. The Project Area, including parking and staging for construction, was fenced using exclusion fencing to exclude BNLL from moving into the area. Since the Project Area is within known BNLL habitat, the following measures are recommended:

1. Project employees and contractors will receive formal training prior to working at the Project Area including attending a sensitive species education program developed by trained biologists, focusing on BNLL and any other sensitive species that may occur in the Project Area. At a minimum, the program will cover species distribution, identification characteristics, sensitivity to human activities, legal protection, penalties for violation of state and federal laws, reporting requirements, and project mitigation measures. The training will also cover these avoidance recommendations:

2. Vehicles will observe a 10-mph speed limit within 2 miles of the nearest BNLL observation site. The speed limit will be imposed on all dirt and gravel roads leading to the Project Area to allow all Project personnel adequate reactionary time to stop their vehicle/equipment safely if a BNLL is observed on any of the access roads.

3. To prevent attracting wildlife to the Project Area, trash and food items will be kept in closed containers and removed daily. Trash and food items may attract BNLL predators, such as coyotes, foxes, and ravens. All trash and food items must be removed from the Project Area at the end of the workday and be kept in covered containers at all times.

4. A 360-degree inspection of all vehicles and equipment will be conducted prior to moving and operation to ensure that no BNLL or other wildlife is present beneath the tires, tracks, and/or undercarriage of vehicles/equipment. If a BNLL is observed beneath vehicles/equipment, the individual will be allowed to leave of its own accord and will not be harassed in any way.

5. Vehicles will use existing and/or designated roads and avoid any cross-country travel, outside of the exclusion fence. No vehicles or equipment may access overland routes until a Qualified Biologist has cleared the route for travel and has confirmed no burrows are present.

6. All open trenches, excavations, and/or holes more than 2 feet deep will be backfilled or covered at the end of each workday to prevent entrapment of BNLL or other wildlife.

If a hole is covered, it will be with appropriately sized plywood (or other similar cover types) with soil used to seal the edges. Any gaps or openings around the edge of the plywood must be sealed with soil or another material to deter BNLL and other wildlife from entering the excavation. If an excavation or hole is too large to cover, earthen escape ramps will be installed at an incline ratio of no greater than 2:1 at least every 300 feet. A Qualified Biologist would confirm that excavations are adequately ramped to allow animals to exit. All open trenches and excavations will be inspected for the presence of wildlife each workday. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals.

7. Spills of hazardous materials will be immediately cleaned up to prevent exposure to BNLL and other wildlife.

8. All observations or suspected observations of BNLL and/or other wildlife will be reported to the biological monitor immediately. If any BNLL and/or other wildlife are observed within the Project Area, all work activities that may harm or injure an individual will be halted immediately, until the animal leaves of its own accord. Under no circumstance will an animal be harassed or chased from the Project Area.

9. All burrows outside of the BNLL exclusion fence will be avoided. The BNLL exclusion fence is buried 6 inches underground and serves as a barrier between ground disturbing activities and burrows outside of the fence.

MM-BIO-8 Kangaroo Rat During the pre-disturbance biological survey, the Qualified Biologist will look for burrows that are characteristic of giant kangaroo rat. If any potential giant kangaroo rat burrows are observed, further measures will be taken to determine the presence of giant kangaroo rat within the Project Area. If giant kangaroo rat are determined to be present within the Project Area, CDFW and USFWS will be consulted to determine what additional measures would be necessary to prevent harm to this species.

MM-BIO-9 Burrowing Owl If the pre-disturbance biological survey identifies the presence of an occupied burrowing owl burrow, the following measures would be implemented and included in the pre-disturbance biological survey report:

1. Occupied burrowing owl burrows will not be disturbed during the burrowing owl nesting season (February 1 through August 31). The non-disturbance buffer distances shown in Table 4 below, in accordance with CDFW (2012), will be maintained between all disturbance areas and burrowing owl nesting sites. Well drilling is considered high disturbance.

Table 4. Recommended Non-Disturbance Buffers for Occupied Burrowing Owl Nesting Sites Based on Project Activity Impact Level (CDFW, 2012). Table 4. Recommended Non-Disturbance Buffers for Occupied Burrowing Owl Nesting Sites Based on Project Activity Impact Level (CDFW, 2012).

Time of Year	**Level of Disturbance**		
	Low	**Medium**	**High**

April 1 – Aug 15	656 feet	1,640 feet	1,640 feet
Aug 16 – Oct 15	656 feet	656 feet	1,640 feet
Oct 16 – Mar 31	164 feet	328 feet	1,640 feet

2. If occupied burrow avoidance is infeasible during the non-breeding season (between September 1 and January 31), a Qualified Biologist shall implement a passive relocation Project in accordance with the CDFW (2012) Staff Report on Burrowing Owl Mitigation, which may include installing one-way doors in burrow entrances for 48 hours to ensure the owl(s) have left the burrow, daily monitoring during the passive relocation period, and subsequently collapsing evicted burrows, once unoccupied, to prevent re-occupation. Prior to passive relocation or exclusion efforts, a burrowing owl management plan will be prepared and approved by CDFW. Destruction of burrows will occur only pursuant to a CDFW-approved burrowing owl management plan; burrow excavation will be conducted by hand whenever possible.

3. As an alternative to passive relocation, occupied burrows that are identified within 500 feet but outside the area of ground disturbance may be buffered with hay bales, fencing (e.g., sheltering in place), or as directed by the Qualified Biologist in coordination with CDFW, to avoid disturbance of burrows.

MM-BIO-10 American Badger If the pre-disturbance biological survey identifies the presence of an occupied American Badger burrow, the following measures would be implemented:

1. Occupied American badger dens (non-maternity dens) will be avoided by establishing a minimum 50-foot non- disturbance buffer.

2. Occupied maternity dens will be avoided by establishing a minimum 200-foot non-disturbance buffer during the pup-rearing season (February 15 through July 1).

3. A Qualified Biologist will establish (e.g., flag) non-disturbance buffer areas, as identified above, and will periodically monitor ground-disturbing activities to ensure no work is encroaching on established buffer areas.

4. Destruction of a maternity den burrow shall only proceed after the maternity den is no longer active and no badgers are present within the burrow.

MM-BIO-11Reptiles If the pre-disturbance biological survey identifies the presence of California glossy snake, San Joaquin coachwhip, western spadefoot, or any other reptile species of special concern within the Project Area, the following measures would be implemented:

1. If any California glossy snakes, San Joaquin coachwhips, or any other reptile species of special concern are observed during construction, the identified special-status reptiles will be allowed to move out of the work area on their own or will be removed from the work area and released in adjacent suitable habitat by the Qualified Biologist. The

Qualified Biologist will have all appropriate permits in place prior to handling any special-status reptiles or any other wildlife.

2. No monofilament plastic will be used, such as for erosion control.

3. All construction equipment and construction personnel vehicles will be checked prior to moving them, to ensure that no special-status reptile is under equipment/vehicles. If any individuals are detected beneath equipment or vehicles, the equipment or vehicles will be left in place until the individual(s) moves out of harm's way on its own accord, as determined by a Qualified Biologist.

MM-BIO-12 Crotch's Bumblebee Crotch's bumblebee is a candidate for listing on the California Endangered Species Act (CESA), further surveys and measures may be recommended by CDFW or CalGEM. If bumblebee species that are or could be Crotch's bumblebee are observed at the Project Area during the pre-disturbance biological survey, CDFW will be contacted to determine what measures would be necessary to prevent harm.

MM-BIO-13 Best Management Practices The following best management practices (BMP) will be implemented during all construction, operations, and maintenance activities to avoid and minimize potential significant adverse impacts on biological resources:

1. All vehicles will observe a 20 mile-per-hour speed limit in all areas of disturbance and on unpaved roads unless otherwise posted. Off-road traffic outside designated access routes will be prohibited. Speed limit signs will be posted at visible locations at the point of site entry and at regular intervals on all unpaved access roads. A reduced speed limit of 10 miles-per-hour will be posted and observed within 0.25-mile of any reported BNLL observation. A 10-mile-per-hour speed limit will be observed at night.

2. All disturbance activities, except emergency situations or drilling that may require continuous operations, will occur only during daylight hours. Continuous 24-hour drilling activities will use directed lighting, shielding methods, or reduced lumen intensity. All new lighting fixtures for safety and security at facilities would be shielded, oriented downward, and on-demand lighting and/or with timers, to avoid unnecessary visual disturbance to wildlife.

3. All food-related trash items and microtrash, such as wrappers, cans, bottles, bottle tops, and food scraps will be disposed of in closed containers and routinely removed from the Project Area, at intervals of no less than once per week.

4. Excavations, spoils piles, unpaved access roadways, and parking and staging areas will be subject to dust control.

5. Herbicides application will be in accordance with existing laws and manufacturers' instructions (i.e., pesticide/herbicide labels). All herbicide chemicals used must be registered for use in the U.S. and California and must have a label certifying that the Federal Environmental Protection Agency (EPA) and the California Department of Pesticide Regulation (DPR) have approved the herbicide for use. Herbicides will not be

sprayed within 50 feet of known occurrences of any other special-status plant occurrence or federal land. No rodenticides will be used on any project.

6. All open trenches, excavations, and/or holes more than 2 feet deep will be backfilled or covered at the end of each workday to prevent wildlife entrapment. If an excavation or hole is too large to cover, escape ramps will be installed at an incline ratio of no greater than 2:1 at least every 300 feet. All trenches and excavations will be inspected for the presence of wildlife each day prior to the start of work. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals.

7. All straight construction pipes, culverts, or similar structures with a diameter of 3.5-inches or greater that are stored at a construction site overnight will be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in any way. All bent pipe with a diameter of 3.5-inches or greater that cannot be visually inspected for wildlife with 100 percent certainty will be left in place and monitored by a Qualified Biologist using wildlife cameras and/or tracking material prior to being removed, capped, moved, or buried. If any wildlife is discovered inside a pipe, that section of pipe is not to be moved until the animal vacates the pipe on its own accord.

8. To enable SJKF and other wildlife to pass through the Project Area, any new perimeter fencing installed around project work areas, with the exception of where fencing is required to exclude wildlife from known hazards, will include a 4 to 6-inch opening between the fence and the ground or the fence will be raised 4 to 6 inches above the ground. The bottom of the fence fabric will be knuckled (wrapped back to form a smooth edge), if necessary, to protect wildlife from injury when passing underneath. The perimeter fencing would be installed outside of the BNLL exclusion fence. The BNLL exclusion fence is made to exclude reptiles and amphibians and will not keep SJKF from passing through.

9. All vertical tubes used in project construction and chain link fencing poles will be capped to avoid entrapment and death of special-status wildlife and birds.

10. Discovery of State or federally listed species that are injured or dead will be reported immediately via telephone and within 24 hours in writing to CDFW and USFWS as relevant. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information, such as the cause of injury or death (if known).

11. All activity will use previously disturbed areas to the maximum extent feasible to minimize the amount of new disturbance in areas with existing natural lands.

12. Vehicle, equipment, and material storage will be limited to previously disturbed areas or predefined storage/laydown areas that are incorporated into work site limits. All concrete and asphalt debris will be removed from the Project Area to either a designated concrete or asphalt storage facility, or off site for recycling or proper disposal on completion of construction.

13. No vehicles or construction equipment will be parked within a water of the State, including any dry wash or drainage, nor shall vehicles or construction equipment cross, or travel within a water of the State, including any wash or drainage, where and when water is flowing. No materials will be stored within a Water of the State.

14. All construction equipment and construction personnel vehicles will be checked underneath prior to moving them, to ensure that no wildlife is under equipment/vehicles. If any individuals are detected beneath equipment or vehicles, the equipment or vehicles will be left in place until the wildlife moves out of harm's way on its own accord, as determined by a Qualified Biologist.

15. All tracked vehicles and other construction equipment entering the Project Area from outside of Kern County will be washed or maintained to be weed-free.

16. All washing of trucks, paint, equipment, or similar activities including concrete washout will occur in designated areas/facilities where runoff is fully contained for collection prior to off-site disposal. Wash water may not be discharged from the Project Area, must be stored in a manner that excludes sensitive wildlife species, and located at least 100 feet from any water of the State.

b) The Project Area contains disturbed habitat with non-native grassland species. The review of the National Wetlands Inventory identified an intermittent stream (Carneros Creek) near the Project Area and two unnamed intermittent streams that lie across the existing road that will be used to access the Project Area. No Project activities are planned within any aquatic features. To ensure there is no disturbance or impact to any of the above-mentioned aquatic features, **MM-HAZ-1**, **MM-HAZ-2**, and **MM-HYDRO-1** will be implemented for the duration of the Project. Therefore, there would be ***no impact*** to sensitive natural communities, and impacts to riparian areas would be ***less than significant with mitigation***.

c) The biological survey conducted in 2023 confirmed that there are no wetlands present within or near the Project Area. Therefore, there would be ***no impact*** to wetlands.

d) The Project Area is currently enclosed by a fence used to exclude BNLL from entering. The fenced area encompasses approximately 2.1 acres of grassland habitat. The linear dimensions of the fenced area are approximately 500 feet x 255 feet x 450 feet x 150 feet. This is a very small area compared to the surrounding landscape of habitat. An excluded area of that size should not impede wildlife from moving around it. The fenced area may provide a minimal obstacle to wildlife movement. Therefore, the impact on wildlife movement would be ***less than significant***.

e) Based on the biological reconnaissance surveys, there are no trees that would need to be removed on the Project Area. Therefore, the Project would not conflict with any local ordinances, and there would be ***no impact***.

f) The Project Area is not located within the boundaries of a HCP. The Project would not conflict with an adopted HCP, NCCP, or other approved local, regional, or state HCP, and there would be ***no impact***.

3.5 Cultural Resources

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Environmental Setting and Baseline

An archaeological and historic property record search of the Area of Potential Effect (APE), or Project Area, and a 0.25-mile radius was conducted at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (SSJVIC-CHRIS) at the California State University, Bakersfield on June 26, 2023. The records search did not reveal any previously recorded resources within the Project Area or 0.25-mile search radius.

On June 29, 2023, Padre Associates conducted a Phase I archaeology study. The study included a records search of the Project Area plus 0.25-mile radius and a pedestrian survey of the entire Project Area. The records search did not reveal any previously recorded resources. No cultural resources were observed during the pedestrian survey (Padre Associates 2023b; Appendix C).

Environmental Assessment

a) Cultural resource surveys conducted within the Project Area (Appendix C) concluded that there were no identified cultural resources within the boundaries. Therefore, the Project would have ***no impact*** on historical resources.

b) No archaeological resources were identified within the Project Area during the records search or pedestrian survey (Appendix C). Therefore, impacts to archaeological resources are expected to be less than significant. However, in the unlikely event of an inadvertent discovery, implementation of **MM-CUL-1/TCR-1** would ensure impacts are minimized to the extent feasible**.** Therefore, impacts to archaeological resources would be ***less than significant with mitigation.***

MM-CUL-1/TCR-1 Discovery of Previously Unknown Cultural or Tribal Cultural Resources In the event any potential tribal cultural resources, archaeological resources/materials,

other cultural resources, or articulated or disarticulated human remains are discovered during ground disturbance or construction activities, Bidr shall cease any ground disturbing and construction activities within 50 feet of the find, or an agreed upon distance based on the Project Area and nature of the find. Work stoppage shall remain in place until the qualified archaeologist, or other designated on-stie specialist, determines the nature of the discovery, and evaluates the significance of the discovery and recommends appropriate treatment measures. Per CEQA Guidelines Section 15126.4(b)(3), Project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. If it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with CalGEM, which may include data recovery or other appropriate measures. CalGEM will consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Tribal cultural resources shall not be photographed nor be subjected to any studies beyond such inspection as may be necessary to determine the nature and significance of the discovery. If the discovery is confirmed as potentially significant or a tribal cultural resource, an Environmentally Sensitive Area (ESA) will be established using fencing or other suitable material to protect the discovery during subsequent investigation. No ground-disturbing activities will be permitted within the ESA until the area has been cleared for construction. The exact location of the resources within the ESA must be kept confidential and measures shall be taken to secure the area from site disturbance and potential vandalism. If after consultation it is deemed appropriate, archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to CalGEM and the Southern San Joaquin Valley Information Center.

c) No human remains have been identified within the Project Area; therefore, no impacts are anticipated to occur. However, in the unlikely event of an inadvertent discovery, implementation of the cultural resources' procedures described in **MM-CUL-2/TCR-2** would ensure that impacts would be ***less than significant with mitigation***.

MM-CUL-2/TCR-2 Unanticipated Discovery of Human Remains If human remains or associated grave goods (e.g., non-human funerary objects, artifacts, animals, ash or other remnants of burning ceremonies) are uncovered during Project construction, Bidr shall immediately halt all ground disturbing work within 50 feet of the discovery or other agreed upon distance based on the Project Area and nature of the find; treat the remains with respect and dignity; contact the Kern County Coroner within 24 hours to evaluate the remains; and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5(e)(1), California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.8. The Kern County Planning and Natural Resources Department shall be notified concurrently. If the County Coroner determines the remains to be of Native American origin, the County Coroner shall contact the Native

American Heritage Commission within 24 hours of this determination, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill (AB) 2641). The Native American Heritage Commission shall designate a Most Likely Descendant for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple humans remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et. seq.) directing identification of the next-of-kin will apply.

Unless otherwise required by law, the stie of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act (Cal. Govt. Code § 6250 et seq.).

3.6 Energy

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☒	☐	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Environmental Setting and Baseline

Energy capacity, or electrical power, is generally measured in watts while energy use is measured in watt-hours. For example, if a light bulb has a capacity rating of 100 watts, the energy required to keep the bulb on for 1 hour would be 100 watt-hours. If ten 100-watt bulbs were on for 1 hour, the energy required would be 1,000 watt-hours or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts, which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

Power for the construction phase of the proposed Project would be generated at the Project Area using diesel-powered electrical generators.

Environmental Assessment

a) Construction activities associated with the Project are estimated to take 56 total days to complete for grading, rig setup, well drilling, rig decommission and facility construction. Construction of the proposed Project would require the use of fuels (primarily gasoline and diesel) for the operation of construction equipment and vehicles to perform a variety of activities, including excavation, hauling, well installation, and vehicle travel (including on-site and commuter trips). Table 3.6-1 provides an estimate of construction fuel consumption for the proposed Project based on information provided by the CalEEMod 2022.1 air quality computer model.

Table 3.6-1 Estimated Construction Fuel Consumption

Phase	Equipment	Quantity	Total No. Hours Operated	Horsepower	Load Factor	Fuel Consumption Rate (gallons per hour)	Total Fuel Consumption (gallons)
Site Preparation and Grading	Dozer	1	100	150	0.4	2.4	240.00
	Grader	1	100	224	0.41	3.6736	367.36
	Excavator	1	100	248	0.37	3.6704	367.04
	Drill Rig	1	20	185	0.5	3.7	74.00
	Pump	1	40	84	0.74	2.4864	99.46
	Loader	1	100	164	0.37	2.4272	242.72
						Phase Total Fuel Consumption (gallons)	1,390.58
Phase	**Equipment**	**Quantity**	**Total No. Hours Operated**	**Horsepower**	**Load Factor**	**Fuel Consumption Rate (gallons per hour)**	**Total Fuel Consumption (gallons)**
Rig Setup	Forklift	1	30	150	0.2	1.2	36.00
	Crane	1	30	231	0.29	2.6796	80.39
	Welder	1	30	46	0.45	0.828	24.84
						Phase Total Fuel Consumption (gallons)	141.23

Phase	Equipment	Quantity	Total No. Hours Operated	Horsepower	Load Factor	Fuel Consumption Rate (gallons per hour)	Total Fuel Consumption (gallons)
Well Drilling	Drill Rig	1	432	650	0.5	13	5,616.00
	Mudpump	2	864	1000	0.74	59.2	25,574.40
	Genset, Rig Power	2	864	400	0.74	23.68	10,229.76
	Genset, Instruments	1	432	127	0.74	3.7592	1,623.97
	Forklift	1	144	150	0.2	1.2	172.80
	Genset, Auxiliary	3	1,296	60	0.74	5.328	2,301.70
	4000w Light Tower	3	648	15	0.42	0.756	163.30
	8000w Light Tower	3	648	30	0.42	1.512	326.59
	Backhoe	1	216	97	0.37	1.4356	620.18
	Welder	2	864	46	0.45	0.828	715.39
	Phase Total Fuel Consumption (gallons)						47,344.09

Phase	Equipment	Quantity	Total No. Hours Operated	Horsepower	Load Factor	Fuel Consumption Rate (gallons per hour)	Total Fuel Consumption (gallons)
Well Decommission	Forklift	1	30	150	0.2	1.2	36.00
	Crane	1	30	231	0.29	2.6796	80.39
	Welder	2	60	46	0.45	0.828	49.68
	Phase Total Fuel Consumption (gallons)						166.07

Phase	Equipment	Quantity	Total No. Hours Operated	Horsepower	Load Factor	Fuel Consumption Rate (gallons per hour)	Total Fuel Consumption (gallons)
Tank Facility Construction	Crane	1	80	231	0.29	2.6796	214.37
	Forklift	2	240	89	0.2	0.712	170.88
	Backhoe	2	320	97	0.37	1.4356	459.39
	Welder	2	320	46	0.45	0.828	264.96
						Phase Total Fuel Consumption (gallons)	1,109.60
						Project Total Fuel Consumption (gallons)	50,151.6

Source: Refer to Appendix A for CalEEMod assumptions used in this analysis.

Notes:

1 Derived using the following equation: Fuel Consumption Rate = Horsepower x Load Factor x Fuel Consumption Factor. Where: Fuel Consumption Factor for diesel engines is 0.04 gallons per horsepower per hour (gal/hp/hr). Total Fuel Consumption calculated using the following equation: Total Fuel Consumption = Number of Equipment Units x Duration in Hours x Fuel Consumption Rate.

Project construction would occur over five phases, with the drilling phase utilizing the most construction equipment. As shown in Table 3.6-1, the construction of the proposed Project would result in total consumption of approximately 50,152 gallons of diesel fuel. In addition to direct construction energy consumption, indirect energy use would be required to make the materials and components used in construction. This includes energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing.

The total diesel and gasoline fuel sales in Kern County was estimated by the California Energy Commission to be 543 million gallons in 2021 (California Energy Commission 2023). Accordingly, the estimated 50,152 gallons of diesel fuel required for Project construction activities would represent approximately 0.01 percent of total diesel and gasoline fuel sales in Kern County. As such, fuel energy consumed during Project construction would be temporary and would not represent a substantial demand on energy resources.

In addition, energy conservation would occur during Project construction through implementation of **RR-EN-1**, compliance with the CARB anti-idling and emissions regulations specified in Title 13, Section 2485, of the C.C.R, which require that equipment not used for more than five minutes be turned off. Compliance with these regulations would result in less fuel combustion and energy consumption and thus minimize the

Project's construction-related energy use. Project construction equipment would also be required to comply with EPA and CARB engine emission standards. (See **RR-GHG-5** and **RR-GHG-6**.) These emission standards require highly efficient combustion systems to maximize fuel efficiency and reduce unnecessary fuel consumption.

In addition, the Project includes several energy- and fuel-efficient design features (**DF-EN-1**) that would help minimize inefficient or wasteful use of energy and increase conservation during construction. For example, the proposed grading plan is designed to balance all earthwork on site, which would avoid truck trips that would have been required to haul-in fill materials to the site and haul-off of materials to be exported off-site. This would reduce fuel use, while also reducing temporary increases in noise and exhaust emissions. The grading plan and on-site construction equipment would also minimize impacts to the surrounding transportation network that would result from truck traffic associated with soil import/export and mobilization/demobilization. Further, with adherence to **RR-EN-2**, idling times on all diesel-fueled off-road vehicles over 25 horsepower will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes, with fleet operators being required to develop a written policy as required by C.C.R., Title 23, Section 2449 ("CARB Off-Road Diesel Regulations").

Implementation of **DF-EN-1**, **MM-EN-1**, and **RR-EN-1**, **RR-EN-2,** would further reduce fuel consumption and energy use.

Following construction, the potential Project operations energy use would consist of electricity at the well and production facility. Normal operational activities also include fuel use for vehicles, as follows:

- Normal operational activities at the well includes:
    - Two crew trucks daily
    - One vacuum truck daily
    - Well pump engine (25 HP)
    - Tank heater (4 MMBtu/Hr)

The well and tank heater will be operated by a field gas or commercial propane fueled engine. Annual fuel use will be no more than 17,799 MMBtu. There is no electricity required for operation of the proposed Project. Therefore, normal operations would not have any impact on the total electricity consumption in Kern County. Operation activities include daily operation of worker vacuum trucks that would consume an estimated 8,760 gallons of diesel fuel per year. As described above for construction equipment, compliance with the CARB anti-idling and emissions regulations that require that equipment not used for more than five minutes be turned off would result in energy conservation as would compliance with EPA and CARB engine emission standards that require highly efficient combustion systems to maximize fuel efficiency and reduce unnecessary fuel consumption.

With compliance with applicable regulations and implementation of **RR-EN-1**, **ENG-2**, **RR-EN-2**, and **MM-EN-1**, the Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, the Project would result in ***less than significant impacts with mitigation***.

MM-EN-1 Energy Conservation

1. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

2. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available, and it is not feasible to use propane or natural gas.

b) The Project would occur adjacent to an active oil field and would not conflict with or obstruct any state or local renewable energy or energy efficiency plans. There is no electricity required for normal operations. State utilities are on target to achieve a net zero energy system by 2040, consistent with Assembly Bill (AB) 32, Senate Bill (SB) 32, and AB 1279. The Project would not conflict or obstruct utilities from achieving these targets. Therefore, impacts are considered ***less than significant***.

3.7 Geology and Soils

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource?	☐	☐	☒	☐
g) Directly or indirectly destroy a unique site or unique geologic feature?	☐	☐	☐	☒

Environmental Setting and Baseline

The Project Area is situated near the McDonald Anticline and the Carneros Creek Oil Fields, located in Kern County, California. This region is characterized by a semi-arid climate, with hot summers and mild winters. The terrain includes rolling hills and valleys, with the McDonald Anticline forming a prominent geological feature that influences local topography and drainage patterns. The McDonald Anticline and Carneros Creek Oil Fields are part of the larger San Joaquin Basin, which is known for its rich deposits of hydrocarbons. The geological formations in this area primarily consist of sedimentary rocks, including sandstone, shale, and siltstone. The anticline structure is significant for trapping oil and gas deposits.

The National Resources Conservation Service (NRCS, 2023) Web Soil Survey classifies the Project Area as being composed of Panoche Clay. Table 3.7-1 summarizes the key soil characteristics of the Project Area as classified by the NRCS.

Table 3.7-1 Key Soil Characteristics of the Project Area

Attribute	Description	Attribute	Description
Soil Classification	Panoche Clay (2 to 5 percent slopes)	Zone of Water Saturation within 72 Inches	None
Location	Alluvial fans, valleys	Organic Matter Content in Surface Horizon	About 0 percent
Parent Material	Alluvium derived from igneous and sedimentary rock	Ecological Site	R017XG043CA Loamy 6-8" P.Z.
Depth to Root Restrictive Layer	Greater than 60 inches	Non-Irrigated Land Capability Classification	7e
Natural Drainage Class	Well drained	Irrigated Land Capability Classification	2e
Water Movement in Most Restrictive Layer	Moderately high	Hydric Criteria	Does not meet
Available Water to 60 Inches	High	Calcium Carbonate Equivalent within 40 Inches	Typically, does not exceed 3 percent
Shrink-Swell Potential	Moderate	Saline Horizons within 30 Inches of Surface	None
Flooding	Not flooded	Reference	NRCS, 2023

State law to restrict development near active faults in California was established under the Alquist-Priolo Earthquake Fault Zoning Act (CDOC, 2022a). The Project Area is not within a fault zone; the San Andreas fault is located approximately 6 miles southwest of the Project Area and is the nearest fault zone to the Project Area (CDOC, 2022b). The proposed Project is not in a subsidence zone (USGS, 2023) and is not located in an area

with high landslide potential or a liquefaction zone (CDOC, 2022a). The Project Area is mapped as composed of moderately expansive soil (Kern County 2023).

Every geologic unit can be assigned a Potential Fossil Yield Classification (PFYC) class based on the probability and abundance of known vertebrate fossils and scientifically significant invertebrate and plant fossils. The PFYC scheme ranges from very low (PFYC 1) to very high (PFYC 5) depending on the potential fossil yield (BLM, 2016). The Project Area is underlain by nonmarine terrace deposits, which is assigned a PFYC Class 2 alluvial fan deposits.

Environmental Assessment

a) i) ii) The Project Area is not located within an Alquist-Priolo Earthquake fault zone (CDOC, 2022a). Fault rupture is the surface displacement that occurs when movement on a fault deep within the earth breaks through to the surface. Fault rupture and displacement almost always follows preexisting faults, which are zones of weakness, however not all earthquakes result in surface rupture (i.e., earthquakes that occur on blind thrusts do not result in surface fault rupture). Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. In addition to damage caused by ground shaking from an earthquake, fault rupture is damaging to buildings and other structures due to the differential displacement and deformation of the ground surface that occurs from the fault offset, leading to damage or collapse of structures across this zone.

While the closest fault to the Project Area is the active San Andreas fault, no known active or potentially active faults are mapped crossing or immediately adjacent to any project components. Therefore, there is little to no potential for primary fault rupture to impact the Project Area.

The intensity of the seismic shaking, or strong ground motion, during an earthquake is dependent on the distance between the Project area and the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions underlying and surrounding the Project Area. Earthquakes occurring on faults closest to the Project Area would most likely generate the largest ground motion. The intensity of earthquake induced ground motions can be described using peak site accelerations, represented as a fraction of the acceleration of gravity (g). The USGS National Seismic Hazards (NSH) Maps were used to estimate approximate peak ground accelerations (PGAs) in the proposed Project Area (USGS, 2014). The NSH Maps depict peak ground accelerations with a 2 percent probability of exceedance in 50 years, which corresponds to a return interval of 2,475 years and for a maximum considered earthquake. The estimated approximate peak ground acceleration from large earthquakes for the Project Area is approximately 0.8g, which corresponds to moderate to strong ground shaking.

Seismic ground-shaking could result in structural damage to Project infrastructure and facilities. However, the proposed Project does not involve any infrastructure or facilities that would include human occupancy. The risk of injury during the proposed Project associated with ground-shaking, landslides, or liquefaction are low. It is possible that

ground-shaking could substantially damage Project related infrastructure. The Project would be designed and constructed to conform with the most recently adopted building codes (**RR-GEO-1**) and Bidr would prepare and operate the proposed well in accordance with a Spill Prevention Control and Countermeasures (SPCC) Plan which will be prepared in accordance with CalGEM's requirements found in C.C.R., Title 14, Section 1722.9 and the Oil Pollution Prevention requirements of the Clean Water Act (40 CFR Part 112). (**MM-HAZ-2**.) In addition, BIDR will inspect all facilities in the event of an emergency and implement contingency measures for notification and clean-up in the event of a spill. (**MM-HAZ-2.**) Therefore, the Project would not exacerbate any existing risk from seismic hazards and impacts would be ***less than significant.***

iii, iv) In order to determine liquefaction susceptibility of a region, three major factors must be analyzed. These include the density and textural characteristics of the alluvial sediments, the intensity and duration of ground shaking, and the depth to groundwater.

The nonmarine terrace deposit found at the surface of the Project Area varies in thickness from 0 to less than 436 feet. below ground surface. The composition of the nonmarine terrace deposits as defined by drillers' logs in the area include clay, sand, gravel, and boulders. There are no reported water bearing sands within the nonmarine terrace deposits. Due to the lack of shallow groundwater depths, there is not potential that the project components would be subject to liquefaction-related phenomena in the event of a large regional earthquake.

The other form of seismically induced ground failure which may be caused by an earthquake is seismically induced landslides. Landslides triggered by earthquakes have been a significant cause of earthquake damage. Areas that are most susceptible to earthquake-induced landslides are steep slopes in poorly cemented or highly fractured rocks, areas underlain by loose, weak soils, and areas on or adjacent to existing landslide deposits. However, as the proposed Project components would be in flat to relatively flat topography and are not located immediately adjacent to steep slopes, earthquake induced slope instability is not likely to affect the proposed Project.

The Project Area is not located within a landslide or liquefaction zone and therefore, there is no potential for impacts to Project infrastructure and facilities related to landslides or liquefaction. Therefore, the Project would have ***no impact*** with regards to adverse effects related to landslides or liquefaction.

b) The general description and select physical characteristics of hazards of erosion and shrink/swell potential for soils were reviewed to evaluate potential hazards to the proposed Project related to unsuitable soil conditions. The general susceptibility of the soil associations underlying the proposed Project to sheet and rill erosion, wind erodibility, and shrink-swell potential is discussed below.

The NRCS Soil Survey Geographic (SSURGO) database for Kern County, California, Southeastern Part was reviewed to identify soil units and characteristics underlying the Proposed Project (NRCS, 2023). Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss

Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. The Project Area is composed of Panoche Clay (2 to 5 percent slopes) with a K factor of 0.28. Clays act as a binder to soil particles, thus reducing the potential for erosion. A wind erodibility group (WEG) consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The wind erodibility group for the Project Area is 6.

Soil erosion and loss of topsoil could occur due to surface disturbing activities including well pad grading and construction. Clays act as a binder to soil particles, thus reducing the potential for erosion. The Project Area is composed of Panoche Clay (2 to 5 percent slopes). Soils would be permanently compacted, which could lead to surface runoff and erosion during construction activity. Bidr would implement the erosion control measures described in **MM-HYDRO-1.** Therefore, potential erosion and topsoil loss impacts would be ***less than significant with mitigation***.

c) The Project Area is composed of very deep, well drained soils that are not unstable nor would the proposed Project cause them to become unstable. The Project Area is not located within a liquefaction or landslide zone. Therefore, the Project would result in ***less than significant impacts*** on soil stability, landslide, lateral spreading, subsidence, liquefaction, or collapse.

d) Linear extensibility is the method used by the NRCS to determine the shrink-swell potential of soils. Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. The volume change is reported as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3 percent, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed in areas with expansive soils. The shrink-swell potential at the Project Area is moderate at 4.5 percent. While the Project Area is mapped as moderate, the Project does not involve construction of any buildings or structures for human occupancy. Therefore, the Project would not result in any direct or indirect risks to human life or property and ***no impacts*** would occur.

e) The Project would not involve the construction of any septic tank or other alternative wastewater disposal systems. Therefore, there would be ***no impact.***

f) The Project Area is underlain by nonmarine terrace deposits, which is assigned a PFYC Class 2 alluvial fan deposits. Class 2 is a Low PFYC, and geologic units are not likely to

contain paleontological resources. Units assigned to Class 2 typically have one or more of the following characteristics:

- Field surveys have verified that significant paleontological resources are not present or are very rare.
- Units are generally younger than 10,000 years before present.
- Recent aeolian deposits.
- Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely.

Except where paleontological resources are known or found to exist, management concerns for paleontological resources are generally low and further assessment is usually unnecessary except in occasional or isolated circumstances. Paleontological mitigation is only necessary where paleontological resources are known or found to exist. BIDR will implement monitoring, notification, and collection procedures to be followed in the event of inadvertent discovery of paleontological resources during ground-disturbing activities. In the event of an inadvertent discovery, all work at the site of discovery, and in any other locations where damage to the discovery could occur, shall cease until notification of a qualified archaeologist, or other designated on-stie specialist. Work may not begin again until the qualified archaeologist, or other designated on-stie specialist, confirms it is safe to do so. (See **MM-CUL-1/TCR-1**.)

As part of any WEAP training (**MM-HAZ-1**), all construction personnel shall be trained regarding the recognition and protection of possible buried paleontological resources during construction, prior to the initiation of construction or ground-disturbing activities. Training shall inform construction personnel of the procedures to be followed upon the discovery of paleontological materials. These procedures include notification of a paleontological monitor upon an accidental discovery and cessation of all work at the site of discovery until written approval to proceed is provided by the monitor. All personnel shall be instructed that unauthorized collection or disturbance of fossils and artifacts is unlawful. The probability of impacting significant paleontological resources is low (BLM, 2016), therefore, impacts to paleontological resources would be ***less than significant***.

g) There are no unique geologic features present at the Project Area; therefore, there would be ***no impacts*** to these resources.

3.8 Greenhouse Gas Emissions

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Environmental Setting and Baseline

Recent significant changes in global climate patterns have been associated with global warming, an average increase in the temperature of the atmosphere near Earth's surface. Global warming has been attributed to the accumulation of Greenhouse Gas (GHG) emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities is responsible for contributing to global warming, disrupting ecosystems and making it harder for species to adapt resulting in unprecedented and irreversible levels of extinction and loss of biodiversity. The Intergovernmental Panel on Climate Change has reported that a rapid phase-out of fossil fuel use is essential to limit global warming and avoid the most catastrophic consequences of climate change.

The standard state definition of GHG includes six substances: CO_2; methane (CH_4); nitrous oxide (N_2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulfur hexafluoride (SF_6) (CARB 2014). Tropospheric O_3 (a short-lived, not-well-mixed gas) and black carbon are also important climate pollutants. CO_2 is the most abundant GHG, and collectively CO_2, CH_4, and N_2O amount to 80 percent of GHG effects. Emissions of other GHGs other than CO_2 are frequently expressed in the equivalent of CO_2, denoted as CO_2e. CO_2e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect.

Environmental Assessment

a) The Project would result in GHG emissions from diesel- and gasoline-powered construction equipment including drill and completion/workover rig engines, drill pad construction equipment, equipment trucks, water trucks, drill rig crew trucks/vehicles,

and portable lift equipment. Emissions could also occur through venting or fugitive losses from valves and fittings, pumps, compressors, and the wellhead.

Construction and operation GHG emissions were estimated using the SCAQMD's CalEEMod 2022.1 model (refer to Appendix A) based on assumptions detailed in Section 2, *Project Description*, including the Project's construction schedule and operation activities detailed in Section 2.4 and Section 2.5, respectively. Short-term construction emissions (e.g., off-road equipment, worker vehicle trips, grading, drilling, and installation of ancillary equipment) and annual operation emissions associated with the proposed Project were evaluated. Based on the results of this modeling, unmitigated construction emissions would result in a total of 488 metric tons of carbon dioxide equivalent ($MTCO_2e$). These emissions are amortized over the lifetime of the Project (30 years) with annual emissions estimated at 16.3 $MTCO_2e$ per year. For operational emissions, annual GHG emissions are estimated based on well servicing operations. Thus, operational emissions would result in an estimated 104 $MTCO_2e$ per year for the duration of the Project. Total Project GHG emissions for construction and operations are summarized in Table 3.8-1.

Table 3.8-1 Estimated Project Greenhouse Gas Emissions

Activity	GHG Emissions ($MTCO_2e$/year)
Construction (amortized over 30-year life of Project)	16.3
Operations	104
Total	**120.3**

The SJVAPCD does not have numeric thresholds for GHG emissions for CEQA. Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project will comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include an "air quality attainment or maintenance plan and/or plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significance for GHG emissions if a project complies with regulatory programs to reduce GHG emissions.

In the absence of any adopted numeric threshold, the significance of the proposed Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b) by considering whether the Project complies with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. At the time of this writing, Kern County has not developed a Climate Action Plan. Therefore, for the purposes of this analysis, the Project

is evaluated against the CARB 2022 Scoping Plan update. Measures included in the Scoping Plan update would indirectly address GHG emission levels associated with construction activities, including the phasing-in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a low-carbon fuel standard. Policies formulated under the mandate of AB 32, now followed by SB 32, that apply to construction-related activity either directly or indirectly, are assumed to be implemented Statewide and would affect the Project should those policies be implemented before construction begins. Specifically, implementation of AB 32 control measures for reduced vehicle emissions would decrease GHG emissions from the Project.

In addition, CARB approved additional regulations to reduce fugitive and vented emissions from new and existing oil and gas facilities, implementing Measure I-2 of the AB 32 Scoping Plan. The Oil Field Operator is required to comply with this regulation, thus reducing GHG emissions and being consistent with the AB 32 Scoping Plan, the Scoping Plan update, and the *Regulation Order Subarticle 13: Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities § 95665*. Specifically, this regulation covers GHG emissions, predominately methane, from production, gathering and boosting stations, and processing as well as natural gas storage and transmission compressor stations. It addresses both vented (intentional) and fugitive (unintentional) releases of GHGs by processes at facilities in the following sectors: (1) onshore and offshore crude oil or natural gas production; (2) crude oil, condensate and produced water separation and storage; (3) natural gas underground storage; (4) natural gas gathering and boosting stations; (5) natural gas processing plants; and (6) natural gas transmission compressor stations. This regulation establishes emission standards for active and idle equipment and components at these facilities. Compliance with the Scoping Plan Measure I-2 requirements (**RR-GHG-1**) would ensure that the proposed Project would not conflict with AB 32 or SB 32.

Further, consistent with the requirements of the SJVAPCD Permits, Bidr is required to obtain an Authority to Construct Permit and Permits to Operate for any facility or equipment with the potential to emit air contaminants, as required pursuant to District Rule 2010. (**RR-AIR-2**.) All permitted equipment shall comply with District Rule 2201 (**RR-AIR-1**), which requires no net increase in emissions above specified thresholds from new and modified Stationary Sources of all nonattainment pollutants and their precursors. For oil field operations, permitted equipment used for crude oil and natural gas production and processing is subject to District Rule 4409 (*Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities*) (**RR-GHG-4**) and Federal New Source Performance Standards (**RR-GHG-5**), which ensure stringent Leak Detection and Repair requirements. SJVAPCD Rule 2260 (*Registration Requirements for Equipment Subject to California's Oil and Gas Regulation*) (**RR-GHG-3**) would ensure compliance with California's Oil and Gas Regulation (*Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities*, 17 C.C.R. § 95665 et seq.) and provides a registration mechanism that satisfies compliance requirements. Accordingly,

the proposed Project would not conflict with the Scoping Plan update or any other plans, policies, or regulations for the purpose of reducing GHG emissions.

Further, consumers of electricity and transportation fuels are, in effect, regulated by requiring providers and importers of electricity and fuel to participate in the GHG Cap-and-Trade Program and other Programs (e.g., low carbon fuel standard, renewable portfolio standard, etc.). Each such sector-wide program exists within the framework of AB 32 and its descendant laws, the purpose of which is to achieve GHG emissions reductions consistent with the AB 32 Scoping Plan. In summary, the Project would increase GHGs emissions from operations, electricity use, and combustion of gasoline/diesel fuels, each of which is regulated near the top of the supply-chain. With respect to GHGs from electricity, the AB 32 Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Pacific Gas and Electric (PG&E) Company is subject to the AB 32 Cap-and-Trade Program with all of their reported emissions covered under the program (CARB 2022). With respect to GHGs from use and combustion of gasoline/diesel fuels, the Cap-and-Trade Program also covers the GHG emissions associated with the combustion of transportation fuels in California, whether refined in-state or imported. The point of regulation for transportation fuels is when they are "supplied" (i.e., delivered into commerce). Accordingly, as with stationary source GHG emissions and the GHG emissions attributable to electricity use, virtually all of GHG emissions from CEQA projects associated with vehicle miles traveled (VMT) are covered under the Cap-and-Trade Program. Thus, Project GHG emissions will be consistent with the relevant plan (i.e., AB 32 Scoping Plan).

As to indirect GHG emissions impacts as a result of any oil sold during and as a result of Project implementation, in accordance with CEQA Guidelines section 15145, after a thorough investigation the California Department of Conservation has determined that such GHG impacts, while plausible, are too speculative for evaluation.

As such, GHG emissions associated with Project operations would be reduced to ***less than significant*** with coverage under the Cap-and-Trade Program (**RR-GHG-2**) and compliance with CARB requirements and the SJVAPCD Rules applicable to the Project (**RRs AIR-1, AIR-2, AIR-3, AIR-4, AIR-5, AIR-6, AIR-7, and AIR-8**).

b) As described above, California has enacted several pieces of legislation that relate to GHG emissions and climate change, which sets aggressive goals for GHG reductions within the State. The first and most far-reaching is AB 32, now followed by SB 32, in which CARB must ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. While AB 32 establishes control measures that would apply to light, medium, and heavy-duty vehicles, and the proposed Project would operate those types of vehicles, these measures are being implemented at the State level and the Project would not conflict with the implementation of AB 32 control measures for reduced vehicle emissions. These measures also serve to decrease on-road and off-road GHG emissions from the Project.

As also described above, CARB approved additional regulation to reduce fugitive and vented emissions from new and existing oil and gas facilities, implementing Measure I-2 of the AB 32 Scoping Plan. The Oil Field Operator is required to comply with this regulation, thus reducing GHG emissions and being consistent with the AB 32 Scoping Plan, the Scoping Plan update, and the *Regulation Order Subarticle 13: Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities § 95665*. Further, consistent with the requirements of the SJVAPCD Permits, Bidr would obtain an Authority to Construct Permit and Permits to Operate for any facility or equipment with the potential to emit air contaminants, as required pursuant to District Rule 2010. SJVAPCD Rule 2260 would ensure compliance with California's Oil and Gas Regulation (*Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities*, 17 C.C.R. § 95665 et seq.) (**RR-GHG-3**) and provides a registration mechanism that satisfies compliance requirements. Accordingly, the Project would be conducted in compliance with applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions and impacts would be ***less than significant***.

3.9 Hazards and Hazardous Materials

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☒	☐	☐

Environmental Setting and Baseline

The Project Area is adjacent to an active oil field. The proposed well would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (DTSC 2021, SWRCB 2023).

The Project Area is in a State Responsibility Area (SRA) for wildfire risk management. As described in Section 3.20, Kern County is a listed CAL FIRE Contract County which shifts initial fire response in SRAs to the county (CAL FIRE 2022). The currently adopted 2007 CAL

FIRE SRA Fire Hazard Severity Zone (FHSZ) map indicates the Project Area is in a high FHSZ. No very high fire hazard zones are within the Project vicinity (CAL FIRE 2007, CAL FIRE 2022).

The nearest school to the Project Area is Belridge Elementary, approximately 4.2 miles southeast.

Environmental Assessment

a, b) The Project does not involve the use or transport of significant amounts of hazardous materials. However, vehicles and equipment used for Project construction would contain or require the short-term use of small amounts of potentially hazardous materials including, but not limited to, fuels, lubricating oils, solvents, antifreeze, hydraulic fluid, and compressed gases. Portable generators often are used so diesel tanks could be used. Propane storage and transport may also be required for the heater. Other specialized chemicals that are potentially hazardous substances and could also be used include acids, bases, demulsifiers, and bactericides. These and other products may be stored at the well pad to support the drilling process.

The potential exists for an accidental release of hazardous materials during well pad preparation and development, drilling, and well completion or operations. Improper management or maintenance of hazardous materials containers, handling of hazardous materials (transfer between containers and equipment), storage, or disposal could result in leaks or larger releases which result in the contamination of soil. Construction activities also have the potential to result in exposure to these hazardous materials by workers, or by the public, if access to the construction site is not adequately controlled or if the materials are not properly handled and contained.

An analysis of well blowouts and consequences in the Inland District of CalGEM was published in 2009, which evaluated data from 1991 to 2005. The study found the following: 1) blowouts in the area are rare events – with an annual rate of 1 per 150,000 oil production wells, 2) the frequency of blowouts dramatically decreased over the study period even though there was not a similar decrease in well drilling or per well fluid handling in the same time period. Decrease was attributed to increased experience, improved safety culture, and improved technology, 3) there were no injuries to the public from any of the blowouts (Jordan and Benson 2009).

Bidr would comply with the AB 1960 implementing regulations and 40 CFR Part 112, which address SPCC Plan requirements; production facilities containment, maintenance, and testing; pipeline construction and maintenance; and maintenance and monitoring of production facilities, safety equipment, and other equipment.

In addition, Bidr would comply with CalGEM regulations found in C.C.R., Title 14, Division 2, Chapter 4, Section 1774.2, which requires a Pipeline Management Plan for all waste gas lines less than or equal to four inches in diameter and include a description of the testing method and schedule for all pipelines. (**RR-HAZ-1**.)

Adherence to regulations would limit the potential for exposure from routine use of hazardous materials during construction such that unhealthful levels of exposure by workers at a construction site, or to the general public located outside of Project construction areas, would not be expected.

Furthermore, adherence to these regulations would limit the potential for hazardous materials to be released to the environment due to routine use. While the routine use of hazardous materials related to Project construction would have a low likelihood of resulting in health or environmental consequences from exposure to a hazard by the public offsite or to construction workers onsite, implementation of **MM-HAZ-1** and **MM-HAZ-2** would further ensure safety of workers and the public. Therefore, any hazards to the public from routine use, transport or disposal of hazardous materials or their accidental release would be avoided or reduced to ***less than significant with mitigation.***

MM-HAZ-1 WEAP BMP Training Bidr's WEAP shall include all training requirements identified as Best Management Practices (BMPs) and include annual training for all field personnel (including employees, agents, and contractors). The WEAP shall include hazardous materials and hazardous waste management, and emergency preparedness, release reporting, and response requirements. The WEAP shall also include training regarding the recognition and protection of possible buried paleontological resources during construction, prior to the initiation of construction or ground-disturbing activities. Training shall inform construction personnel of the procedures to be followed upon the discovery of paleontological materials. These procedures include notification of a paleontological monitor upon an accidental discovery and cessation of all work at the site of discovery until written approval to proceed is provided by the monitor. All personnel shall be instructed that unauthorized collection or disturbance of fossils and artifacts is unlawful.

MM-HAZ-2 Spill Prevention Bidr shall develop, maintain, and implement a SPCC Plan in compliance with 14 C.C.R. § 1722.9 and the Oil Pollution Prevention requirements of the Clean Water Act (40 CFR Part 112), and that includes the following measures to prevent, repair, and remediate accidental leaks and spills from oil and gas operations:

1. Construction activities shall be conducted to allow for easy clean-up of spills. Construction crews shall have sufficient tools, supplies, and absorbent and barrier materials to contain and recover spilled materials.

2. Fuels and lubricants shall be stored only at designated staging areas, at least 100 feet away from the edge of water bodies. Fuel and lubricant tanks shall have appropriate secondary spill containment (e.g., curbs), and all refueling, and lubrication equipment shall be restricted to upland areas at least 100 feet away from stream channels and wetlands.

3. Any fuel truck shall carry an oil spill response kit and spill response equipment at all times.

4. All routine equipment maintenance shall be performed at the well pad, and promptly collect and lawfully dispose of wastes at an authorized recycling, treatment, or disposal facility.

5. A sufficient supply of sorbent and barrier materials shall be maintained on construction sites, and sorbent and barrier materials shall also be utilized to contain runoff from contaminated areas.

6. Shovels and drums shall be stored at the well pad or be readily available. If small quantities of soil become contaminated, hand tools such as shovels or other appropriate tools, shall be used to collect the soil and the material shall be stored in storage drums. Large quantities of contaminated soil may be bio-remediated on-site or at a designated remediation facility, subject to government approval, or collected utilizing heavy equipment, and stored in drums or other suitable containers prior to disposal. Should contamination occur adjacent to staging areas as a result of runoff, shovels and/or heavy equipment shall be utilized to collect the contaminated material. Contaminated soil shall be disposed of in accordance with state and federal regulations.

7. Above-ground tanks, valves and other equipment shall be visually inspected monthly and when the tank is refilled. Inspection records shall be maintained. Applicants shall periodically check tanks for leaks or spills.

8. Drain valves on all tanks shall be locked to prevent accidental or unauthorized discharges from the tank.

9. Equipment maintenance shall be conducted in staging areas or other suitable locations (i.e., maintenance shops or yards) to the extent practical.

10. Bidr shall notify the Kern County Environmental Health Division, Certified Union Program Agency (CUPA), surface landowner, and sensitive receptors located within 300 feet, of any hazardous materials/waste release immediately upon discovery, and to other applicable agencies as required by other laws. Bidr shall immediately contain the leak (e.g., by isolating or shutting down the leaking equipment), clean up contaminated media (e.g., soils), and repair the leak prior to recommencing operations. Bidr shall report the status and progress of the leak repair and remediation work to the County and the CUPA on monthly intervals or predetermined intervals until the repair has been completed. Contaminated media shall be analyzed according to 22 C.C.R. §§ 66261.21-66261.24 for determination of appropriate hazardous waste disposal. Hazardous Waste Determination procedures are provided in 22 C.C.R. § 66262.11.

11. If a release cannot be repaired or remediated within 48 hours, and has potential impact to sensitive receptors, Bidr shall incur costs to sample and analyze the potentially affected area, which may include soil, groundwater, outdoor or indoor air of sensitive receptors within 300 feet of the leak. Bidr shall pay all temporary relocation costs (e.g., housing, food, and transportation) for any exposed sensitive receptor until such time as the leak has been repaired and post-indoor air testing has been completed, as confirmed by identified agency having oversight of the remediation.

c) There are no existing or proposed schools within one-quarter mile of the Project Area: the nearest school is approximately 4.2 miles away. Therefore, there would be ***no impact*** related to hazardous materials in the vicinity of a school.

d) The Project Area is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and therefore would have ***no impact*** on the public or environment.

e) The Project Area is not located within an airport land use plan. The nearest active airport is the Elk Hills-Buttonwillow Airport, a county-owned public airport, located over 21 miles southeast of the Project Area. Therefore, the proposed Project would have ***no impact*** regarding safety hazards or excessive noise for people residing or working near an airport.

f) The Project Area is not located in an area with an adopted emergency response plan or emergency evacuation plan. Therefore, there would be ***no impact*** to emergency response or evacuation procedures in an adopted plan.

g) In the event of a wildfire, the proposed drill pad and well could be damaged. Further, increased human activity during construction could increase the risk for wildfire. However, Bidr would comply with all Kern County Fire Codes (**RR-HAZ-2**). Further Implementation of **MM-HAZ-3** and **MM-HAZ-4** would reduce the risk and impacts of wildfire. Therefore, impacts would be ***less than significant with mitigation***.

MM-HAZ-3 Fire Prevention Bidr shall implement the following measures:

1. Maintain firefighting apparatus and supplies required by the Kern County Fire Department.

2. Maintain a list of all relevant fire-fighting authorities for each work site.

3. Have available equipment to extinguish incipient fires and or construction of a fire break, such as: chemical fire extinguishers, shovels, axes, chain saws, etc.

4. Carry water or fire extinguishers and shovels in non-passenger vehicles in the field.

5. Have and maintain an adequate supply of fire extinguishers for welding, grinding, and brushing crews.

6. Protect individual safety to contain any fire that occurs and notify local emergency response personnel.

7. Remove any flammable wastes generated during oil and gas activities regularly.

8. Store all flammable materials used in oil and gas activities away from ignition sources and in approved containers.

9. Allow smoking only in designated smoking areas.

10. Prohibit smoking where flammable products are present and when the fire hazard is high. Train personnel regarding potential fire hazards and their prevention.

11. All internal combustion engines, stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.

12. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. Said vehicle types shall maintain their factory-installed (type) muffler in good condition.

13. Fire rules shall be posted on the Project bulletin board at the contractor's field office and areas visible to employees.

14. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.

15. Personnel shall be trained in the practices of the Fire Safety Plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats.

MM-HAZ-4 Hot Work Equipment Although Bidr does not have a hot work program in place at the field, Bidr shall restrict the use of chainsaws, chippers, vegetation masticators, grinders, tractors, torches, and explosives at its locations, and ensure the sites where this equipment is used are equipped with portable or fixed fire extinguishers and/or a water tank, with hoses, fire rakes, and other tools to extinguish and or control incipient stage fires. The WEAP shall include fire prevention and response training for workers using these tools.

3.10 Hydrology and Water Quality

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in a substantial erosion or siltation on- or off-site;	☐	☐	☐	☒
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Environmental Setting and Baseline

The proposed Project is located within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB). The USFWS National Wetlands Mapper identifies Carneros Creek (classification code R4SBC) approximately 1,470 feet to the west of the Project Area based on infrared imagery from 1984 (USFWS 2023). This waterbody is an intermittent stream and is not present on the Project Area.

The nonmarine terrace deposit found at the surface of the Project Area varies in thickness from 0 to less than 436 feet. below ground surface. The composition of the nonmarine

terrace deposits as defined by drillers' logs in the area include clay, sand, gravel, and boulders. There are no reported water bearing sands within the nonmarine terrace deposits. The uppermost hydrocarbon bearing zone in the vicinity averages a depth of 1,993 feet below ground surface. The Sustainable Groundwater Management Act Data Viewer website, managed by the California Department of Water Resources (DWR), maps groundwater in Kern County and other areas. At the Project Area, there is no depth to groundwater and no groundwater is mapped because there is no known freshwater underlying the Project Area (DWR, 2023). The Sustainable Groundwater Management Act was passed in 2014, introducing a state requirement for the development of Groundwater Sustainability Agencies, requiring local jurisdictions to develop and implement a Groundwater Sustainability Plan that supports regional and state water conservation efforts (KGA, 2022). The Project Area is within the Department of Water Resources (DWR)-designated groundwater Kern County Subbasin, covered by the Kern Groundwater Authority (KGA) Groundwater Sustainability Plan. As the umbrella Groundwater Sustainability Agency in Kern County, the KGA covers approximately 1.3 million acres of the Subbasin and includes many smaller member agencies (KGA, 2022). The KGA Groundwater Sustainability Plan does not identify oil and gas operations as a significant factor affecting the Sustainable Groundwater Management Act objectives in the Subbasin.

Environmental Assessment

a) Construction activities could result in potential effects to the water quality of stormwater runoff through erosion and uncontained leaks or spills of hazardous materials. The Clean Water Act also established the National Pollutant Discharge Elimination System (NPDES) permit program, regulating point source discharges of pollutants into waters of the United States. Section 402 of the Clean Water Act provides that storm water discharges associated with industrial activity and construction must be authorized under a NPDES permit. Clearing, grading, and excavation projects that disturb more than one acre are required to obtain a NPDES storm water discharge permit under EPA regulations, though certain regulations such as 40 C.F.R. §122.26 (a)(2), (e)(8), and (c)(1)(iii) codify exemptions for oil and gas operations. Bidr will ensure that discharges of stormwater runoff during construction and operation activities are not contaminated by, or encounter, any overburden, raw material, intermediate products, finished product, byproduct or waste products; are only contaminated by or only encounter sediment; and pursuant to 40 C.F.R. §122.26(c)(1)(iii) that do not contribute to a violation of a water quality standard. (**RR-HYDRO-1**.)

In California, oil and gas operations may be required to obtain a storm water discharge permit (Construction General Permit Order 2009-0009-DWQ, as amended by 2010-00014-DWQ and 2012-0006-DWQ) under the requirements of the Clean Water Act and the C.F.R., and Bidr would obtain coverage under the Construction General Permit in advance of construction activity, if required. (**RR-HYDRO-2**.) Construction activities could result in potential effects to the water quality of stormwater runoff through erosion and uncontained leaks or spills of hazardous materials. Bidr would implement **RR-HYDRO-1**,

RR-HYDRO-2, **MM-HYDRO-1**, and **MM-HAZ-2** resulting in avoidance or reduction of impacts to ***less than significant impacts with mitigation*** to surface and groundwater quality.

MM-HYDRO-1 Stormwater BMPs Bidr shall implement BMPs during construction and operation activities. All selected practices shall be shown on a drainage implementation plan and self-certified as complete and feasible by a licensed professional qualified in drainage and flood control issues. The following BMPs shall be implemented and shown on the drainage plan:

1. Utilizing established facilities design, and construction or similar standards as applicable appropriate (e.g., ASTM, API).

2. Implementing good housekeeping and maintenance practices.

3. Preventing trash, waste materials and equipment from construction storm water;

4. Maintaining the wellhead, compressors, tanks and pipelines in good condition without leaks or spills.

5. Designing and maintaining a graded pad with berms to not actively erode and discharge sediment; and

6. Maintaining vehicles in good working order.

7. Implementing spill prevention and response measures:

8. Utilizing preventative operating practices such as tank level monitoring, safe chemical handling and conducting regular inspections.

9. Developing and maintaining a spill response plan.

10. Conducting spill response training for employees and have a process to ensure contractors have the necessary training.

11. Maintaining spill response equipment on site.

12. Implementing material storage and management practices.

13. Preventing unauthorized access.

14. Utilizing “run-on” and “run-off” control berms and swales around all pad areas; and

15. Stabilizing exposed slopes through vegetation and other standard slope stability methods.

b) Water used for drilling and dust suppression during construction would total approximately 30,000 bbl and would be obtained from the Belridge Water Storage District through a nearby operator. The water would be delivered by tanker truck generating approximately two vehicle trips per day. (**DF-HYDRO-1**.) Therefore, the necessary water for drilling would not result in any additional groundwater pumping. Further, the Project would involve construction of an earthen well pad (**DF-HYDRO-2**) and would not decrease the area for groundwater recharge. Therefore, the Project would

have a ***less than significant impact*** regarding groundwater management of the basin and groundwater supplies.

c) As discussed in response to question b, the proposed drill pad would be earthen in nature but graded prior to drilling. (**DF-HYDRO-2**.) Therefore, the proposed Project would not impede infiltration of stormwater through the addition of impervious surfaces. The Project does not involve the alteration of any natural drainages or streams, nor change the drainage pattern at the Project Area. Construction activity could result in potential effects to the water quality of stormwater runoff but would not increase the rate of stormwater runoff. With the implementation of **RR-HYDRO-1** the Project would result in ***no impacts*** with regard to increases in erosion, siltation, or the rate or amount of surface run-off or the capacity of existing or planned stormwater drainage systems.

d) The Project Area is not located in a flood hazard, tsunami, or seiche zone (Kern County 2004a) and would not impede or redirect any flood flows. The Federal Emergency Management Agency (FEMA) designates the boundaries of Flood Hazard Areas, or those areas anticipated to be inundated in the event of a 100-year storm event, on Flood Insurance Rate Maps (FIRMs). FIRMs for the Project Area indicate that the Project Area is located in areas designated as Zone X, or areas with a minimal flood hazard. The Zone X designation means that the area would have a moderate to low risk of inundation following a storm event and is protected by a levee or dam from 100-year flood events as well as 500-year storm events. Therefore, there would be ***no impact*** from the risk of pollutant release due to Project inundation.

e) As described in response to b) above, water for the proposed Project would be obtained from an irrigation canal and would not conflict with the KGA Groundwater Sustainability Plan. (**DF-HYDRO-1**.) Therefore, the proposed Project would not conflict with any sustainable groundwater management plans or water quality control plans, and there would be ***no impact***.

3.11 Land Use and Planning

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Environmental Setting and Baseline

Figure 6 below displays the current land use of each parcel within the Project Area. The proposed well is located within an Exclusive Agricultural (A) zone; oil production is a permitted use for this zoning type (Kern County, 2022). As established above, the Project Area is entirely on land with an Oil and Gas Conformity Tier 2 rating (Kern County, 2023). The proposed well is within a Tier 2 Oil Conformity zone. The Kern County Zoning Ordinance designates Oil Conformity Tier 2 to "areas that are classified Exclusive Agriculture (A) or Limited Agriculture (A-1) Districts, have agriculture as the primary surface land use, and are not included in Tier 1." (Kern County, 2021).

Most of the site and surrounding area is bare earth, with dirt roads throughout the Project Area. The nearest residence and sensitive receptor to the Project Area is 7,700 feet south of the project. The Project Area is surrounded by oil field operations, primarily to the north and west.

Existing access to the property is in the northwestern corner of parcel 085-170-09.



Figure 6 - Designated Land Use on the Project Area and Surrounding Areas (created January 11, 2024)

Environmental Assessment

a) The proposed Project would be constructed and operated adjacent to an existing oil field and would not divide an established community. Therefore, ***no impacts*** to an established community would occur.

b) The Project would not conflict with any local, regional, or federal land use plan. Oil and gas extraction is a permitted land use within Exclusive Agricultural zoning. The Project would also conform with the Kern County General Plan Section 5.3.6, Environmental Impacts of Petroleum "to clearly identify and mitigate any adverse impacts on the environment from new or continued petroleum development by establishing clear and workable methods for industry compliance" by identifying and mitigating impacts of petroleum development, as described in this IS (Kern County, 2009). Therefore, there would be ***no impacts*** related to any land use plans, policies, or regulations.

3.12 Mineral Resources

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

Environmental Setting and Baseline

The Project Area is located adjacent to the administrative boundaries of the McDonald Anticline and Carneros Creek Oil Fields. There are no other aggregate resources, consisting of stone, sand, and gravel, identified within the Project Area.

Environmental Assessment

a), b) The Project would result in the production of a known mineral resource (e.g., petroleum) that is of value to the region and the residents of the State. Therefore, the Project would result in a ***less than significant impact*** related to mineral resources.

3.13 Noise

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental Setting and Baseline

There are no sensitive receptors within one mile of the Project Area. The nearest residential property to the proposed well is approximately 7,700 feet away. The Kern County General Plan applies an exterior noise level standard of 65 A-weighted decibels (dBA) Day-Night Average Level (L_{dn}/DNL) for noise levels in outdoor activity areas of residential and other noise sensitive uses (Kern County 2009). The L_{dn} represents the time-weighted energy average of decibels at equivalent sound level (dB, L_{eq}) for a 24-hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 PM to 7:00 AM). In addition, when a Project activity is proposed in an area with an ambient noise level under 65 dBA, Kern County considers the noise impact of that activity to be significant if it will increase the ambient noise by more than 5 dBA. The adopted standard allows the property owner the use and enjoyment of their outdoor areas, such as the backyard of a single-family house or conducting church services. Chapter 8.36, Noise Control (Section 8.36.020, Prohibited Sounds) of the Kern County Zoning Ordinance prohibits the creation of construction noise between the hours of 9:00 PM and 6:00 AM on weekdays and between the hours of 9:00 PM and 8:00 AM on weekends, which is audible to a person with average hearing faculties or capacity at a distance of 150 feet from the construction site, if the construction site is within 1,000 feet of an occupied residential dwelling except for emergency work or when the Development Services Director or his designated representative provides an exemption for a limited time. A change in sound levels of 3

dBA is generally regarded as being barely perceptible to the human ear. Accordingly, an increase in sound levels less than 3 dBA at a distance of 150 feet from the construction site is assumed to comply with Chapter 8.36 of the Kern County Zoning Ordinance.

Environmental Assessment

a) Short-term construction noise impacts could result from land clearing and grading for the well pad and work areas; maintenance of access roads; construction of accessory facilities (including pipelines and electrical transmission lines); transporting the drilling rig, associated equipment, workers, and materials to the well pad site; well drilling; and construction equipment operations. As detailed in Section 2.4, work is anticipated to occur 5 days per week from 7:00 AM to 5:00 PM for preparation of the well pad and installation of associated ancillary facilities. Due to the complexity of drilling and the hazards associated with leaving a well unattended during the drilling process, drilling operations are typically conducted 24-hours per day. Drilling activities will be performed 7 days per week. Construction noise is usually made up of intermittent peaks and continuous lower levels of noise from equipment cycling through use. The types and numbers of construction equipment near any specific receptor location would vary over time. As summarized above, there are no sensitive receptors within one mile of the Project Area. Potential noise impacts were modeled using a 7,700-foot distance; assuming ambient noise levels of 50 dBA (7:00 AM to 10:00 PM) and nighttime noise of 40 dBA (10:00 PM to 7:00 AM) (consistent with rural environments [USEPA 1978]) corresponding to a Day-Night Average Sound Level (Ldn) of 50 dBA (i.e., equivalent sound level for a 24-hour period with an additional 10 dBA imposed on the equivalent sound levels for night time hours of 10:00 p.m. to 7 :00 a.m.); and the Federal Transit Authority's construction noise methodology (FTA 2006). Table 3.13-1 lists equipment expected to be used during each phase along with the typical expected equipment noise levels and usage factors adapted from the Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide (FHWA 2006). The User's Guide provides the most recent comprehensive assessment of noise levels from construction equipment. Taking into account standard attenuation of noise with increased distance from a noise source (6 dBA/doubling of distance), the noise generated during well pad construction and drilling activities was propagated out to 7,700 feet to estimate the maximum noise levels resulting from the proposed Project as summarized in Tables 3.13-1 and 3.13-2.

Table 3.13-1 Construction Equipment Noise Levels in Project Area

Project Activity	Equipment	Quantity	Daytime Operating Hours	Nighttime Operating Hours	Acoustical Usage Factor (%)[1]	Typical Equipment L_{max} (dBA) at 50 feet from Source[1]	Calculated L_{eq} (dBA)	Calculated L_{dn} (dBA)
Grading	Dozer	1	11	0	40	81.7	33.9	
	Grader	1	11	0	40	83.4	35.7	
	Excavator	1	11	0	40	80.7	33.0	
	Loader	1	11	0	40	79.1	31.4	
	Drill	1	11	0	20	84.4	33.6	
	Pump	1	11	0	50	80.9	34.2	
						Noise at 7,700 feet	**41.6**	**38.2**
Rig Setup	Forklift	1	11	0	40	79.1	31.4	
	Crane	1	11	0	16	80.6	28.8	
	Welder	1	11	0	40	74.0	26.3	
						Noise at 7,700 feet	**34.1**	**30.7**
Well Drilling Operations	Drill	1	15	9	100	84.4	40.6	
	Pump	2	15	9	100	80.9	37.1	
	Generator	6	15	9	100	80.6	36.8	
	Light Tower	6	0	9	41	80.6	33.8	
	Forklift	1	15	9	40	79.1	31.4	
	Backhoe	1	15	9	40	77.6	29.8	
	Welder	2	15	9	40	74.0	26.3	
						Noise at 7,700 feet	**48.4**	**54.8**
Rig Decommission	Forklift	1	11	0	40	79.1	31.4	
	Crane	1	11	0	16	80.6	28.8	
	Welder	2	11	0	40	74.0	26.3	
						Noise at 7,700 feet	**34.7**	**31.3**

Project Activity	Equipment	Quantity	Daytime Operating Hours	Nighttime Operating Hours	Acoustical Usage Factor (%)[1]	Typical Equipment L_{max} (dBA) at 50 feet from Source[1]	Calculated L_{eq} (dBA)	Calculated L_{dn} (dBA)
Facility Construction	Crane	1	11	0	16	80.6	28.8	
	Forklift	2	11	0	40	79.1	31.4	
	Backhoe	2	11	0	40	77.6	29.8	
	Welder	2	11	0	40	74.0	26.3	
						Noise at 7,700 feet	**38.0**	**34.6**

Notes:

[1] Adapted from FHWA Roadway Construction Noise Model User's Guide (FHWA 2006)

Table 3.13-2 Operational Equipment Noise Levels in Project Area

Project Activity	Equipment	Quantity	Daytime Operating Hours	Nighttime Operating Hours	Acoustical Usage Factor (%)[1]	Typical Equipment L_{max} (dBA) at 50 feet from Source[1]	Calculated L_{eq} (dBA)	Calculated L_{dn} (dBA)
Normal Operations	Well Pump Engine	1	15	9	100	84.4	36.8	
						Noise at 7,700 feet	**36.8**	**43.2**
Well Workover	Pump	1	15	9	100	80.9	37.1	
	Drill Rig	1	15	9	100	84.4	40.6	
	Generator	1	15	9	100	80.6	36.8	
	Forklift	1	15	9	40	79.1	31.4	
	Backhoe	1	15	9	40	77.6	29.8	
	Welder	1	15	9	40	74.0	26.3	
	Crane	1	15	9	16	80.6	28.8	
						Noise at 7,700 feet	**44.0**	**50.4**

The Kern County General Plan applies an exterior noise level standard of 65 dB DNL for noise levels in outdoor activity areas of residential and other noise sensitive uses (Kern County 2004b). In addition, for commercial and industrial uses located within 500 feet of a residential property with ambient noise level under 65 dB L_{dn}, Kern County considers the noise impact of that project activity to be significant if it will increase the ambient noise by more than 5 dB (Kern County Zoning Ordinance §19.80.030(s)). The adopted standard

allows the property owner the use and enjoyment of their outdoor areas, such as the backyard of a single-family house or conducting church services. The Project's noise impacts as they relate to the installation of the new well is therefore evaluated against an absolute 65 dB L_{dn} standard. As shown in Tables 3.13-1 and 3.13-2, the Project would be in compliance with the Kern County General Plan noise level standard and during construction and operations would be below 55 dBA L_{dn} at 7,700 feet from any individual Project component. Thus, the proposed Project would not increase noise levels by more than 5 dBA and the proposed Project would comply with the Kern County General Plan noise level standard at the location of the nearest sensitive receptor. Therefore, impacts would be ***less than significant***.

b) Construction would result in temporary ground vibration. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Construction activities most likely to cause vibration include heavy construction equipment and drilling. Ground-borne vibration dissipates very rapidly with distance, reducing the typical construction-related vibrations to less than the threshold of 0.2 in/sec for typical non-engineered timber and masonry buildings at a distance greater than 10 feet from the source and to an imperceptible level at about 200 feet from the source (FTA 2006). There are no sensitive receptors within one mile of the nearest Project components; thus, receptors would not perceive vibration or ground-borne vibration during construction. Operation of the Project would not result in vibrations perceptible to nearby receptors. As such, impacts would be ***less than significant***.

c) The Project Area is located roughly 21 miles from the Elk Hills-Buttonwillow Airport. However, the proposed Project will not involve construction or expansion of the airport and would not result in the addition of sensitive receptors inside of the 65 dBA Community Noise Equivalent Level (CNEL) airport noise contour. Therefore, ***no impacts*** are anticipated due to the proximity to the airport.

3.14 Population and Housing

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Setting and Baseline

The Project would occur adjacent to the existing McDonald Anticline and Carneros Creek Oil Fields. The nearest incorporated city to the Project Area is Wasco, which has a current population of 30,800 (U.S. Census Bureau 2023).

Environmental Assessment

a) Site preparation and construction activities would involve the employment of up to 22 workers over a period of about two months. All workers are expected to come from the Kern County area. Once the construction is complete, no new workers would be required. Therefore, the Project would have ***no impact*** on population growth.

b) The Project would occur adjacent to the existing McDonald Anticline and Carneros Creek Oil Fields and would not result in the displacement of any residences or people. As such, the Project would have ***no impact*** on housing or resident displacement.

3.15 Public Services

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: i) Fire protection?	☐	☒	☐	☐
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Environmental Setting and Baseline

The Project Area is currently served by the Kern County Sheriff's Department and Kern County Fire Department. There are no schools or parks within four miles of the Project Area (the nearest school, Belridge Elementary School, is approximately 4.2 miles from the Project Area).

Environmental Assessment

a) The Project would occur adjacent to the existing McDonald Anticline and Carneros Creek Oil Fields, only incrementally increasing the amount of equipment and infrastructure in the area. The incremental increase in equipment would not require new or expanded fire protection or other safety efforts. The number of vehicles at the site would increase by approximately 10-15 during construction of the Project, and during Project operation the number of vehicles would decrease to 3 daily vehicle trips. No new permanent employees would be necessary for Project implementation, so the Project would not induce population growth in the area. Therefore, the Project would not put an increased burden on off-site public services, including police, school, and other governmental services. Implementation of **MM-HAZ-3** and **MM-HAZ-4** would ensure risks of wildfire are minimized and do not result in an increased burden on fire protection services. Therefore, impacts to public services would be ***less than significant with mitigation***.

3.16 Recreation

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. RECREATION. Would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Environmental Setting and Baseline

The proposed Project would be adjacent to the existing McDonald Anticline and Carneros Creek Oil Fields and would be similar in nature to the existing conditions in the area. There is no recreational development within the Project vicinity.

Environmental Assessment

a), b) The Project would not result in any new, permanent employees, and hence use of existing neighborhood and regional parks or recreational facilities would not increase because of Project implementation. Further, recreation would not be affected by noise or traffic associated with construction and operation of the Project. Thus, the Project would have no effect on demand for existing nearby parks or other recreational facilities. Therefore, there would be ***no impact*** to recreational facilities.

3.17 Transportation

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION. Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☐	☒

Environmental Setting and Baseline

Regional access to the Project Area would be provided via State Highway 33, a two-lane highway that provides north-south travel along the eastern edge of the Temblor Mountain Range. State Highway 33 to Seventh Standard Road provides access to the Project Area; Seventh Standard Road runs east-west just outside of the Project area, and as such provides both the northern and southern access points to the Project Area.

Environmental Assessment

a) The Project would not involve any transportation improvements or programs that would conflict with adopted policies, plans, or programs supporting alternative transportation, such as the Kern County Regional Transportation Plan. The Project does not involve any roadway improvements or closures, or the development of any new driveways or access roads. Under the Kern County Oil and Gas Ordinance (not currently effective), oil wells must be setback at least 100 feet from major or secondary highways. The Project area is not located within 100 feet of any such roadways. As such ***no impact*** would occur.

b) During Project construction the maximum number of trips to the site will be 22 workers and 18 vendors during the drilling phase. All trips would originate from nearby areas in Kern County. Project equipment would remain onsite during construction. During operations, the Project would be staffed by current oilfield personnel. The State Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018) states that projects that generate fewer than 110 automobile trips per day generally may be assumed to cause a less than significant transportation

network. As the Project would generate a maximum of 80 one-way trips per day, the Project would not cause a significant increase in vehicle miles traveled and impacts would be ***less than significant***.

c) The Project would not result in any changes to any roads, intersections, streets, highways, nor would it provide any incompatible uses to the street and highway system. All vehicles that would be used for travel to and from the Project would be licensed and comply with all appropriate transportation laws and regulations including obtaining and adhering to provisions of any required permits for oversized loads. As such, impacts related to transportation design hazards would be ***less than significant***.

d) The Project would occur adjacent to an existing developed oil field and would not result in any changes in ingress or egress to the site. Therefore, the Project would have ***no impact*** on emergency access.

3.18 Tribal Cultural Resources

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES.				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Environmental Setting and Baseline

On June 15, 2023, Padre Associates submitted a Sacred Lands File search request to the Native American Heritage Commission (NAHC) seeking assistance with identifying California Native American Tribes that are traditionally and culturally affiliated with the Project Area. The results of the search indicated that there are no known tribal cultural resources listed or eligible for listing in the California Register of Historical Resources or a local register listing for the Project's APE (Padre Associated 2023b; Appendix C). On July 23, 2023, the NAHC provided Padre Associates with a list of 8 Tribes and 14 Tribal contacts, which Padres Associates then provided to CalGEM. The identified Tribes included:

- Kitanemuk & Yowlumne Tejon Indians
- Salinan Tribe of Monterey, San Luis Obispo Counties
- Santa Rosa Rancheria Tachi Yokut Tribe
- Santa Ynez Band of Chumash Indians
- Tejon Indian Tribe

- Tule River Indian Tribe
- Xolon-Salinan Tribe
- yak tityu tityu yak tiłhini – Northern Chumash Tribe

Subsequently, CalGEM became aware of the existence of additional Tribes affiliated with the Project Area that were not previously identified by the NAHC. To meet the requirements of Public Resources Code section 21080.3.1, CalGEM contacted the NAHC to obtain an updated list of Tribes and Tribal contacts.

On September 11, 2024, the NAHC provided a list of 23 Tribes and 35 Tribal contacts. The identified Tribes included:

- Barbareño/Ventureño Band of Mission Indians
- Chumash Council of Bakersfield
- Coastal Band of the Chumash Nation
- Dumna Wo-Wah Tribal Government
- Fernandeno Tataviam Band of Mission Indians
- Kern Valley Indian Community
- Kitanemuk & Yowlumne Tejon Indians
- Morongo Band of Mission Indians
- Northern Chumash Tribal Council
- Quechan Tribe of the Fort Yuma Reservation
- Salinan Tribe of Monterey, San Luis Obispo Counties
- San Fernando Band of Mission Indians
- San Manuel Band of Mission Indians
- Santa Rosa Rancheria Tachi Yokut Tribe
- Santa Ynez Band of Chumash Indians
- Serrano Nation of Mission Indians
- Table Mountain Rancheria
- Tejon Indian Tribe
- Traditional Choinumni Tribe
- Tubatulabals of Kern Valley
- Tule River Indian Tribe
- Xolon-Salinan Tribe
- yak tityu tityu yak tiłhini – Northern Chumash Tribe

On February 20, 2025, CalGEM provided consultation notification letters to all provided contacts. The letters provided a brief description of the Project, a map identifying the location of the Project Area, the lead agency's contact information, and a notification that requests for consultation would be accepted within sixty (60) days of receipt of the letter, in accordance with Public Resources Code Section 21080.3.1. On April 6, 2025, within the 60-day notification period, CalGEM followed up with all Tribal contacts concerning the consultation notification letters.

To date, no requests for consultation from the listed California Native American Tribes have been received as part of the CalGEM's tribal consultation efforts.

Environmental Assessment

a) i), ii) As a result of the above efforts, no known tribal cultural resources have been identified within the Project Area or vicinity.

Therefore, it is not expected that tribal cultural resources would be impacted during Project construction or operations. In the unlikely event of a tribal cultural resource discovery, BIDR would implement the following mitigation measures to reduce the potential to cause a substantial adverse change to a tribal cultural resource: **MM-CUL-1/TCR-1** and **MM-CUL-2/TCR-2**. Therefore, impacts to tribal cultural resources would be ***less than significant with mitigation***.

MM-CUL-1/TCR-1 Discovery of Previously Unknown Cultural or Tribal Cultural Resources In the event any potential tribal cultural resources, archaeological resources/materials, other cultural resources, or articulated or disarticulated human remains are discovered during ground disturbance or construction activities, Bidr shall cease any ground disturbing and construction activities within 50 feet of the find, or an agreed upon distance based on the Project Area and nature of the find. Work stoppage shall remain in place until the qualified archaeologist, or other designated on-site specialist, determines the nature of the discovery, and evaluates the significance of the discovery and recommends appropriate treatment measures. Per CEQA Guidelines Section 15126.4(b)(3), Project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. If it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with the County, which may include data recovery or other appropriate measures. The Planning and Community Development Department shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Tribal cultural resources shall not be photographed nor be subjected to any studies beyond such inspection as may be necessary to determine the nature and significance of the discovery. If the discovery is confirmed as potentially significant or a tribal cultural resource, an Environmentally Sensitive Area (ESA) will be established using fencing or other suitable material to protect the discovery during subsequent investigation. No ground-disturbing activities will be permitted within the ESA until the area has been cleared for construction. The exact location of the resources within the

ESA must be kept confidential and measures shall be taken to secure the area from site disturbance and potential vandalism. If after consultation it is deemed appropriate, archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the Southern San Joaquin Valley Information Center.

MM-CUL-2/TCR-2 Unanticipated Discovery of Human Remains If human remains or associated grave goods (e.g., non-human funerary objects, artifacts, animals, ash or other remnants of burning ceremonies) are uncovered during Project construction, Bidr shall immediately halt all ground disturbing work within 50 feet of the discovery or other agreed upon distance based on the Project Area and nature of the find; treat the remains with respect and dignity, contact the Kern County Coroner within 24 hours to evaluate the remains; and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5(e)(1), California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98. The Kern County Planning and Natural Resources Department shall be notified concurrently. If the County Coroner determines the remains to be of Native American origin, the County Coroner shall contact the Native American Heritage Commission within 24 hours of this determination, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill (AB) 2641). The Native American Heritage Commission shall designate a Most Likely Descendant for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple humans remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et. seq.) directing identification of the next-of-kin will apply.

Unless otherwise required by law, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code § 6250 et seq.

3.19 Utilities and Service Systems

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental Setting and Baseline

Electrical services in the immediate area are provided by PG&E. PG&E obtains its energy supplies from power plants and natural gas fields in Northern California, as well as from energy purchased outside its service area and delivered through high-voltage transmission lines and pipelines. Power is generated from various sources, including fossil fuel, hydroelectric, nuclear, wind, and geothermal plants, and is fed into the electrical grid system. The well and tank heater will be operated by a field gas or commercial propane fueled engine. There is no electricity required for normal operations and, therefore, normal operations would not have any impact on the total electricity consumption in Kern County.

The Project Area is within the Department of Water Resources-designated groundwater Kern County Subbasin, covered by the Kern Groundwater Authority Groundwater

Sustainability Plan. The water necessary for the proposed Project would primarily be sourced from the Belridge Water District.

The nearest landfill is the Shafter-Wasco landfill, located approximately 24.5 miles east of the Project area.

Environmental Assessment

a) The Project would not require construction of or relocate new water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunication facilities, in order to drill or operate the new well. Therefore, there would be ***no impact***.

b) Approximately 16,000 barrels of water would be required to drill the well. Operation of the well would not require any water, although a small amount of water would be used for dust control as part of normal oil field operations. The water necessary for the proposed Project would primarily be sourced from the Belridge Water District through a nearby operator. The Project would not require purchase of fresh water from a municipal provider or additional groundwater supplies beyond the water rights already held by the supplying operator. (See **DF-HYDRO-1**.) Therefore, the proposed Project would have sufficient water supplies during normal, dry, and multiple dry years, and ***less than significant*** impacts to water supply.

c) Some volumes of waste would be generated during the construction activity associated with drilling of the well. The waste material would be trucked offsite for disposal in an approved landfill. (**DF-UTL-1**.) Sufficient landfill capacity exists to handle the one-time disposal of the minimal amount of this material. No soil would be removed from the site and disposed of as a result of the construction of the proposed Project, and operation of the well would not generate any solid wastes. Therefore, any increase in solid municipal waste would be considered ***less than significant*** because: 1) it is a one-time increase, 2) it would not exceed the capacity of the servicing landfill, and 3) it would comply with all local, state, and federal regulations related to solid waste.

d), e) Soil cuttings and water generated during the well installation will be stored onsite pending waste profile analysis. (**DF-UTL-2**.) Soil will be stored in stockpiles placed on plastic sheeting and covered with plastic sheeting. Water will be stored in half bins. One water sample will be collected from each half bin at the completion of drilling and a representative composite soil sample will be collected from the soil cuttings for purposes of waste profiling. Following waste profiling, if the derived waste is found to be contaminated it will be properly disposed of in accordance with federal and state requirements at the appropriate off-site facility. Waste that is not contaminated may be spread on site. Therefore, the Project would not generate excess solid wastes and there would be ***no impact***. The Project would also comply with federal, state, and local management solid waste regulations. There would be ***less than significant*** impacts related to solid waste.

3.20 Wildfire

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☒	☐	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☒	☐	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☒	☐	☐

Environmental Setting and Baseline

Fire risk for the Project Area was determined using CAL FIRE FHSZ maps; areas are separated by SRA, Local Responsibility Area, and Federal Responsibility Areas. The risk from wildfire ranks from low to very high. The Project Area is located within an SRA (CAL FIRE 2007). Kern County is a listed CAL FIRE Contract County, which shifts the primary fire response in the SRA from CAL FIRE to the county in agreement (CAL FIRE 2022). Adopted in 2007, the CAL FIRE SRA FHSZ map for Kern County indicates the Project Area is within a moderate FHSZ (CAL FIRE 2007). Based on 2022 data from the CAL FIRE SRA FHSZ map for Kern County, the Project Area is within a high hazard zone, but this map has not yet been adopted by Kern County. The Project is not located within any very high FHSZs (CAL FIRE 2022).

Environmental Assessment

a, b, c, d) The Project Area is located within the SRA in an area zoned as high FHSZ. Implementation of **MM-HAZ-3** and **MM-HAZ-4** would ensure that the Project would not expose people or facilities to increased risk from wildfire. Therefore, impacts with regard to wildfire would be ***less than significant with mitigation***.

3.21 Mandatory Findings of Significance

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Environmental Assessment

a) As described in Section 3.4, Biological Resources, the Project Area does not contain designated critical habitat for any federal threatened or endangered species, although a number of special status species have been recorded in the USGS quadrangle in which the Project Area is located as well as the surrounding quadrangles. There are no riparian areas, wetlands, trees, or migratory wildlife corridors within the Project Area, and there are no adopted HCPs or NCCPs for the Project Area. CalGEM has determined that potential impacts of the Project to special status species would be less than significant with the incorporation of mitigation measures **(MM-BIO-1 through BIO-13)** and that there would be no impact to riparian areas, wetlands, trees, wildlife corridors or compliance with adopted HCPs or NCCPs. Therefore, the Project would not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the

number or restrict the range of a rare or endangered plant or animal. Further, as described in Section 3.5, cultural resource surveys conducted within the Project Area concluded that there were no identified cultural resources within its boundaries. Therefore, the Project would have no impact on historical resources. As described in Section 3.18, as a result of a Sacred Lands File search conducted by NAHC and tribal consultation efforts by CalGEM, no known tribal cultural resources have been identified within the Project Area. Any potential impacts to unknown resources would be reduced to less than significant with the implementation of mitigation measures (**MM-CUL-1/TCR-1** and **CUL-2/TCR-2**). Therefore, the Project would not eliminate important examples of major periods of California's history or pre-history, nor cause a substantial adverse change to a tribal cultural resource. Impacts are considered ***less than significant with mitigation***.

b) The Project would result in air emissions and GHG emissions that could be considerable when considered with all other cumulative emission sources in the San Joaquin Valley. However, as described in Section 3.3, Air Quality, CalGEM has determined that impacts of the Project on the applicable air quality plan and on cumulatively considerable pollutant increases would be less than significant as they are less than the thresholds and would follow SJVAPCD rules and regulations. With regards to GHG emissions, the Project emissions would be in compliance with the AB 32 Scoping Plan and the AB 32 Cap-and-Trade Program. Therefore, impacts would be ***less than significant***.

c) The Project is located adjacent to an active oil field and would be operated in accordance with all state and county laws and regulations to ensure that operations are protective of human health and the environment. In addition, implementation of all required mitigation measures would ensure that all impacts are less than significant. Project activities are consistent with the operation of an active oil field and would not directly or indirectly cause substantial adverse impacts to human beings. Impacts would be ***less than significant with mitigation***.

SECTION 4 MMRP

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
RR-AIR-1	Compliance with SJVAPCD Rule 2201 (New and Modified Stationary Source Rule)	--	--	SJVAPCD
RR-AIR-2	Compliance with SJVAPCD Rule 2010 (Authority to Construct and Permit to Operate)	--	--	SJVAPCD
RR-AIR-3	Compliance with SJVAPCD Rule 2280 (Portable Equipment Registration)	--	--	SJVAPCD
RR-AIR-4	Compliance with SJVAPCD Rule 4101(Visible Emissions)	--	--	SJVAPCD
RR-AIR-5	Compliance with SJVAPCD Rule 4623 (Storage of Organic Liquids)	--	--	SJVAPCD
RR-AIR-6	Compliance with SJVAPCD Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities)	--	--	SJVAPCD
RR-AIR-7	Compliance with SJVAPCD Rule 8031 (Bulk Materials)	--	--	SJVAPCD
RR-AIR-8	Compliance with leak detection and repair (LDAR) practices in accordance with SJVAPCD and CARB regulations	--	--	SJVAPCD
MM-BIO-1 Pre-Disturbance Survey	A pre-disturbance biological survey will be conducted by a Qualified Biologist. A Qualified Biologist is defined as a person with a combination of academic qualifications (minimum of 4 years of university or college education in biological sciences, zoology, wildlife biology, ecology, botany, or environmental science), professional field experience conducting biological surveys, and demonstrated knowledge and skills (i.e., field experience) related to the species and habitats present on the Project Area and the specific focused or protocol-level surveys conducted. The purpose of the pre-disturbance biological surveys is to confirm the potential presence and/or absence of any protected status species listed as threatened or endangered under the federal Endangered Species Act, threatened or endangered under the California	Prior to all construction activities. Survey reports, which will include avoidance and minimization measures as applicable.	Bidr must submit survey results to Kern County, USFWS and CDFW.	Kern County Planning and Natural Resources Department; USFWS; CDFW

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	Endangered Species Act, or designated as fully-protected in the California Fish and Game Code, and to confirm the presence and/or absence of any non-protected status sensitive species considered under California Environmental Quality Act. The pre-disturbance biological survey will consist of walking belt transects to accomplish 100% coverage of the Project Area plus a 500-foot buffer. Additionally, a 1,640-foot buffer will be surveyed specifically for burrowing owl burrows, in accordance with Recommended Non-Disturbance Buffers for Occupied Burrowing Owl Nesting Sites Based on Project Activity Impact Level (CDFW, 2012). All direct and indirect observations of special-status biological resources will be recorded using a handheld GPS and on field forms. Habitat will be evaluated by the Qualified Biologist to determine the potential for biological resource monitoring and/or surveys for species that are seasonal or require focused surveys during specified periods (e.g., special-status plants, blunt-nosed leopard lizard). The pre-disturbance biological survey report will include a map of the proposed Project construction boundary, biological survey area, special-status species observations (when observed), areas of potential and/or occupied habitat (if any), areas identified for avoidance, and a list of all applicable mitigation measures that will be implemented for the respective project activity site.			

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
MM-BIO-2 Monitoring	A qualified biological monitor shall be on-site during all Project activities that have the potential to harm or impact special-status wildlife. Project activities that may require a biological monitor include but are not limited to vegetation removal and initial ground disturbance associated with well pad construction. When on-site, the biological monitor shall conduct a biological clearance survey of all work areas prior to the start of daily Project activities. The purpose of the clearance survey is to identify any biological resources (nests, dens, burrows) within the work areas that may have occurred since the last workday, any wildlife species within the work areas, and to inspect any exclusion areas and make sure they remain intact. In addition, the biological monitor shall monitor all vegetation removal and initial ground disturbance. Once activities that have the potential to harm or impact wildlife have been completed, daily biological monitoring will not be required. This determination will be left up to the discretion of the Qualified Biologist. The Qualified Biologist may conduct periodic inspections of Project activities to ensure measures are being implemented and no sensitive wildlife have moved into the area. Depending on the pre-disturbance biological survey, activities that will likely not require a biological monitor include drilling operations and Project operations. If at any time during Project activities any special-status wildlife species are observed within the Project area, work around the animal's immediate area shall be stopped or work shall be redirected to an area within the Project Area that would not impact these species until the animal has left the area of its own volition. Listed species will not be handled or relocated and will be allowed to leave the Project Area unimpeded. Work would resume once the animal is clear of the work area. In the unlikely event a special-status species is	During all Project activities with the potential to harm or impact special status wildlife, and periodically as determined by the Qualified Biologist. On-site monitoring.	Bidr must submit monitoring reports to Kern County, USFWS, and CDFW.	Kern County Planning and Natural Resources Department; USFWS; CDFW

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	injured or killed by Project-related activities, the biological monitor would stop work and notify Bidr and CalGEM and consult with the appropriate agencies to resolve the impact prior to re-starting work in the area. The biological monitor will keep notes of all species observed, compliance concerns if any, and work activities conducted in a daily monitoring log.			
MM-BIO-3 Active Bird Nests	Active bird nest(s) will be avoided by establishing a minimum 250-foot non-disturbance buffer for passerine species, a minimum 500-foot non-disturbance buffer for non-listed raptor nest(s), or a minimum 0.5-mile non-disturbance buffer around any federal or state- listed raptor nest(s) until the breeding season has ended. Non-disturbance buffers can be removed when a Qualified Biologist has determined that the birds have fledged, are no longer reliant on the nest or parental care for survival and adult birds are no longer occupying the nest, or the nest is no longer active (e.g., failed). Reduced non-disturbance buffers may be implemented if a Qualified Biologist concludes that work within the buffer area will not be likely to cause disturbance to or abandonment of the nest (e.g., when the disturbance area is concealed from a nest site by topography, when work activities will have a limited duration within the buffer area, or when the species has been known to tolerate higher levels of disturbance). If reduced non-disturbance buffers are implemented, a Qualified Biologist will monitor the active nest(s) before and during construction to establish a baseline for nest behavior and determine whether construction activities are adversely affecting the nest. If a reduced non-disturbance buffer is implemented, full-time biological monitoring of the nest will occur during construction activities. The pre-disturbance monitoring of the nest site will occur on at	Prior to and during all construction activities. Survey reports, which will include avoidance and minimization measures as applicable; on-site monitoring.	Bidr must submit survey results to Kern County, USFWS, and CDFW.	Kern County Planning and Natural Resources Department; USFWS; CDFW

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	least two occasions of at least one hour each during anticipated work hours prior to construction to establish a behavioral baseline. If behavioral changes are observed, the work causing that change will cease within the buffer area until the nest has fledged or is determined by the Qualified Biologist to no longer be active. The Qualified Biologist shall have the authority to halt or redirect construction activities to protect nesting birds from project activities. Any reduction of buffer areas for State or federal listed species during the nesting season must be authorized by CDFW and/or USFWS.			
MM-BIO-4 WEAP	A Worker Environmental Awareness Program (WEAP) will be presented to all personnel that may access the Project Area, prior to beginning work on the Project Area. The WEAP training will be given by trained personnel (e.g., Qualified Biologist or assigned Company Environmental Specialists). WEAP trainings will cover an overview of the laws and regulations governing the protection of biological resources; a description of protected (i.e., FESA/CESA threatened, endangered, candidate, and other special status) species known to occur or with the potential to occur in the Project Area. The training would include a discussion of the sensitive and protected species and their biology and general behavior, distribution and habitat needs, sensitivity to human activities, and Project-specific protective measures. It will also discuss species status and legal protections, define what is habitat and disturbance, and present biological resource protection measures. Materials will be provided to assist workers in recognizing protected and sensitive species. The training will include avoidance and minimization measures to protect biological resources, the identification of environmentally sensitive areas and avoidance	Prior to all construction activities. WEAP training records.	Bidr must submit record of WEAP training to CalGEM.	CalGEM

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	buffers, and how to report biological resources if observed on site. The training of personnel would be documented using sign-in sheets.			
MM-BIO-5 San Joaquin Kit Fox	If the pre-disturbance biological survey identifies the presence of any Potential, Atypical, Known or Natal San Joaquin kit fox (SJKF) dens, the following measures will be implemented and documented in the pre-disturbance biological survey report. 1. Potential kit fox dens will be clearly identified on project maps, marked in the field, and a 50-foot no work buffer will be demarcated using stakes and flagging or similar materials to prevent inadvertent damage to the potential den. Alternatively, if a potential den cannot feasibly be avoided at such distance, the den may be monitored and blocked or excavated in accordance with the Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to or during Ground Disturbance (USFWS, 2011). All potential dens that will be destroyed by a Project activity or ground disturbance will be fully excavated after monitoring conducted by a Qualified Biologist shows that it is not occupied by a listed or otherwise protected species. 2. If kit fox activity or sign is detected at any den including atypical dens (e.g., pipes, culverts), the den location will be identified as a "known" kit fox den in accordance with USFWS guidelines (USFWS, 2011). A minimum 100-foot no work buffer from any disturbance area will be maintained for known dens. 3. During pupping season (January 1 through August 31 or until pups are no longer dependent on adults), a minimum 500-foot no work buffer (distance at which construction noise attenuates to approximately 60 dBA) from any disturbance area will be maintained from occupied natal dens.	Prior to all construction activities. Survey reports, which will include avoidance and minimization measures as applicable; on-site monitoring.	Bidr must submit survey results to Kern County, USFWS, and CDFW.	Kern County Planning and Natural Resources Department; USFWS; CDFW

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	4. No excavation (or other project-related destruction) of a known or natal den will occur without prior written guidance from USFWS. 5. All pipes (greater than 3.5 inches in diameter) used during project activities would be capped. Stored pipes greater than 3.5 inches that cannot be visually inspected to verify that no wildlife is present will need to be monitored by a Qualified Biologist prior to use or movement. All trenches and excavations would be covered or ramped (1:1 slope) prior to prevent wildlife entrapment. 6. If take (as defined in FESA and/or CESA) of SJKF cannot be avoided, Bidr shall consult with USFWS and/or CDFW to obtain necessary authorization and shall implement all associated conditions, including any required take avoidance or minimization measures, of such authorization. If den exclusion or destruction is permitted under FESA, a Qualified Biologist will supervise any such activity.			
MM-BIO-6 San Joaquin Antelope Squirrel	If the pre-disturbance biological survey identifies burrows within the Project Area that are characteristic of or may be used by San Joaquin antelope squirrel (SJAS), the following avoidance methods for SJAS would be implemented: 1. Pre-activity surveys for SJAS will occur prior to the start of ground disturbance using 10-30 meter spacing. 2. SJAS surveys will be conducted when temperatures range from 50-90˚F. If sunny conditions are not present, surveys would not be conducted if temperatures are below 60 degrees Fahrenheit. 3. Surveyors will scan the survey areas with binoculars and listen for vocalizations. Visual and audible observations will be recorded and mapped.	Prior to all construction activities. Survey reports, which will include avoidance and minimization measures as applicable; on-site monitoring.	Bidr must submit survey results to Kern County, USFWS, and CDFW.	Kern County Planning and Natural Resources Department; USFWS; CDFW

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	4. All active SJAS burrows shall be clearly marked with flagging or staking, and ground-disturbing activities shall observe a minimum 50-foot no work buffer from each active burrow. Avoidance of burrows may be achieved by moving the planned well pad so that it is not within 50-feet of any SJAS burrows. 5. In areas where SJAS have been observed, suspected to occur, or observed within 50 feet, three days of SJAS surveys during the appropriate temperatures are recommended, prior to the start of ground disturbance activities. 6. Vegetation clearing will be completed after three days of no SJAS observations. 7. All holes, trenches, and other openings with a one-inch or greater in diameter must be covered during the day unless workers are in the immediate area working. If covering holes is not feasible while workers are taking required breaks, then the monitoring biologist will walk the area to discourage SJAS from entering the work area until workers return. All holes must be covered overnight.			
MM-BIO-7 Blunt Nosed Leopard Lizard	Blunt-nosed Leopard Lizard (BNLL) protocol-level surveys were conducted for the Project Area in 2023 and resulted in negative findings. The Project Area, including parking and staging for construction, was fenced using exclusion fencing to exclude BNLL from moving into the area. Since the Project Area is within known BNLL habitat, the following measures are recommended: 1. Project employees and contractors will receive formal training prior to working at the Project Area including attending a sensitive species education program developed by trained biologists, focusing on BNLL and any other sensitive species that may occur in the Project Area. At a minimum, the program will	During all Project activities. Survey reports, which will include avoidance and minimization measures as applicable; on-site monitoring.	Bidr must submit survey results to Kern County, USFWS, and CDFW.	Kern County Planning and Natural Resources Department; USFWS; CDFW

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	cover species distribution, identification characteristics, sensitivity to human activities, legal protection, penalties for violation of state and federal laws, reporting requirements, and project mitigation measures. The training will also cover these avoidance recommendations: 2. Vehicles will observe a 10-mph speed limit within 2 miles of the nearest BNLL observation site. The speed limit will be imposed on all dirt and gravel roads leading to the Project Area to allow all Project personnel adequate reactionary time to stop their vehicle/equipment safely if a BNLL is observed on any of the access roads. 3. To prevent attracting wildlife to the Project Area, trash and food items will be kept in closed containers and removed daily. Trash and food items may attract BNLL predators, such as coyotes, foxes, and ravens. All trash and food items must be removed from the Project Area at the end of the workday and be kept in covered containers at all times. 4. A 360-degree inspection of all vehicles and equipment will be conducted prior to moving and operation to ensure that no BNLL or other wildlife is present beneath the tires, tracks, and/or undercarriage of vehicles/equipment. If a BNLL is observed beneath vehicles/equipment, the individual will be allowed to leave of its own accord and will not be harassed in any way. 5. Vehicles will use existing and/or designated roads and avoid any cross-country travel, outside of the exclusion fence. No vehicles or equipment may access overland routes until a Qualified Biologist has cleared the route for travel and has confirmed no burrows are present. 6. All open trenches, excavations, and/or holes more than 2 feet deep will be backfilled or covered at the end of each workday to prevent entrapment of BNLL			

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	or other wildlife. If a hole is covered, it will be with appropriately sized plywood (or other similar cover types) with soil used to seal the edges. Any gaps or openings around the edge of the plywood must be sealed with soil or another material to deter BNLL and other wildlife from entering the excavation. If an excavation or hole is too large to cover, earthen escape ramps will be installed at an incline ratio of no greater than 2:1 at least every 300 feet. A Qualified Biologist would confirm that excavations are adequately ramped to allow animals to exit. All open trenches and excavations will be inspected for the presence of wildlife each workday. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. 7. Spills of hazardous materials will be immediately cleaned up to prevent exposure to BNLL and other wildlife. 8. All observations or suspected observations of BNLL and/or other wildlife will be reported to the biological monitor immediately. If any BNLL and/or other wildlife are observed within the Project Area, all work activities that may harm or injure an individual will be halted immediately, until the animal leaves of its own accord. Under no circumstance will an animal be harassed or chased from the Project Area. 9. All burrows outside of the BNLL exclusion fence will be avoided. The BNLL exclusion fence is buried 6 inches underground and serves as a barrier between ground disturbing activities and burrows outside of the fence.			

<table>
<tr><th>Regulatory Requirement, Design Feature, and/or Mitigation Measure</th><th>Mitigation Description</th><th>Timing & Method of Verification</th><th>Reporting</th><th>Responsible Agency</th></tr>
<tr><td>MM-BIO-8
Kangaroo Rat</td><td>During the pre-disturbance biological survey, the Qualified Biologist will look for burrows that are characteristic of giant kangaroo rat. If any potential giant kangaroo rat burrows are observed, further measures will be taken to determine the presence of giant kangaroo rat within the Project Area. If giant kangaroo rat are determined to be present within the Project Area, CDFW and USFWS will be consulted to determine what additional measures would be necessary to prevent harm this species.</td><td>Prior to all construction activities.

Survey reports, which will include avoidance and minimization measures as applicable; on-site monitoring.</td><td>Bidr must submit survey results to Kern County, USFWS, and CDFW.</td><td>Kern County Planning and Natural Resources Department; USFWS; CDFW</td></tr>
<tr><td>MM-BIO-9
Burrowing Owl</td><td>If the pre-disturbance biological survey identifies the presence of an occupied burrowing owl burrow, the following measures would be implemented and included in the pre-disturbance biological survey report:

1. Occupied burrowing owl burrows will not be disturbed during the burrowing owl nesting season (February 1 through August 31). The non-disturbance buffer distances shown in Table 4 below, in accordance with CDFW (2012), will be maintained between all disturbance areas and burrowing owl nesting sites. Well drilling is considered high disturbance.

Table 4. Recommended Non-Disturbance Buffers for Occupied Burrowing Owl Nesting Sites Based on Project Activity Impact Level (CDFW, 2012).

<table><tr><th rowspan="2">Time of Year</th><th colspan="3">Level of Disturbance</th></tr><tr><td>Low</td><td>Medium</td><td>High</td></tr></table></td><td>Prior to all construction activities.

Survey reports, which will include avoidance and minimization measures as applicable; on-site monitoring.</td><td>Bidr must submit survey results to Kern County, USFWS, and CDFW.</td><td>Kern County Planning and Natural Resources Department; USFWS; CDFW</td></tr>
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Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency

April 1 – Aug 15	656 feet	1,640 feet	1,640 feet
Aug 16 – Oct 15	656 feet	656 feet	1,640 feet
Oct 16 – Mar 31	164 feet	328 feet	1,640 feet

2. If occupied burrow avoidance is infeasible during the non-breeding season (between September 1 and January 31), a Qualified Biologist shall implement a passive relocation Project in accordance with the CDFW (2012) Staff Report on Burrowing Owl Mitigation, which may include installing one-way doors in burrow entrances for 48 hours to ensure the owl(s) have left the burrow, daily monitoring during the passive relocation period, and subsequently collapsing evicted burrows, once unoccupied, to prevent re-occupation. Prior to passive relocation or exclusion efforts, a burrowing owl management plan will be prepared and approved by CDFW. Destruction of burrows will occur only pursuant to a CDFW-approved burrowing owl management plan; burrow excavation will be conducted by hand whenever possible.
3. As an alternative to passive relocation, occupied burrows that are identified within 500 feet but outside the area of ground disturbance may be buffered with hay bales, fencing (e.g., sheltering in place), or as directed by the Qualified Biologist in coordination with CDFW, to avoid disturbance of burrows.

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
MM-BIO-10 American Badger	If the pre-disturbance biological survey identifies the presence of an occupied American Badger burrow, the following measures would be implemented: 1. Occupied American badger dens (non-maternity dens) will be avoided by establishing a minimum 50-foot non- disturbance buffer. 2. Occupied maternity dens will be avoided by establishing a minimum 200-foot non-disturbance buffer during the pup-rearing season (February 15 through July 1). 3. A Qualified Biologist will establish (e.g., flag) non-disturbance buffer areas, as identified above, and will periodically monitor ground-disturbing activities to ensure no work is encroaching on established buffer areas. 4. Destruction of a maternity den burrow shall only proceed after the maternity den is no longer active and no badgers are present within the burrow.	Prior to and during all construction activities. Survey reports, which will include avoidance and minimization measures as applicable; on-site monitoring.	Bidr must submit survey results to Kern County, USFWS, and CDFW.	Kern County Planning and Natural Resources Department; USFWS; CDFW
MM-BIO-11 Reptiles	If the pre-disturbance biological survey identifies the presence of California glossy snake, San Joaquin coachwhip, western spadefoot, or any other reptile species of special concern within the Project Area, the following measures would be implemented: 1. If any California glossy snakes, San Joaquin coachwhips, or any other reptile species of special concern are observed during construction, the identified special-status reptiles will be allowed to move out of the work area on their own or will be removed from the work area and released in adjacent suitable habitat by the Qualified Biologist. The Qualified Biologist will have all appropriate permits in place prior to handling any special-status reptiles or any other wildlife.	Prior to and during all construction activities. Survey reports, which will include avoidance and minimization measures as applicable; on-site monitoring.	Bidr must submit survey results to Kern County, USFWS, and CDFW.	Kern County Planning and Natural Resources Department; USFWS; CDFW

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	2. No monofilament plastic will be used, such as for erosion control. 3. All construction equipment and construction personnel vehicles will be checked prior to moving them, to ensure that no special-status reptile is under equipment/vehicles. If any individuals are detected beneath equipment or vehicles, the equipment or vehicles will be left in place until the individual(s) moves out of harm's way on its own accord, as determined by a Qualified Biologist.			
MM-BIO-12 Crotch's Bumblebee	Crotch's bumblebee is a candidate for listing on the California Endangered Species Act (CESA), further surveys and measures may be recommended by CDFW or CalGEM. If bumblebee species that are or could be Crotch's bumblebee are observed at the Project Area during the pre-disturbance biological survey, CDFW will be contacted to determine what measures would be necessary to prevent harm to this species.	Prior to all construction activities. Survey reports, which will include avoidance and minimization measures as applicable; on-site monitoring.	Bidr must submit survey results to Kern County, USFWS, and CDFW.	Kern County Planning and Natural Resources Department; USFWS; CDFW
MM-BIO-13 Best Management Practices	The following best management practices (BMP) will be implemented during all construction, operations, and maintenance activities to avoid and minimize potential significant adverse impacts on biological resources: 1. All vehicles will observe a 20 mile-per-hour speed limit in all areas of disturbance and on unpaved roads unless otherwise posted. Off-road traffic outside designated access routes will be prohibited. Speed limit signs will be posted at visible locations at the point of site entry and at regular intervals on all unpaved access roads. A reduced speed limit of 10 miles-per-	During all Project activities. Compliance Monitoring Report.	Bidr must submit its initial Compliance Monitoring Report to Kern County, USFWS, and CDFW within 30 days of Project implementation and annually thereafter.	Kern County Planning and Natural Resources Department; USFWS; CDFW

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	hour will be posted and observed within 0.25-mile of any reported BNLL observation. A 10-mile-per-hour speed limit will be observed at night. 2. All disturbance activities, except emergency situations or drilling that may require continuous operations, will occur only during daylight hours. Continuous 24-hour drilling activities will use directed lighting, shielding methods, or reduced lumen intensity. All new lighting fixtures for safety and security at facilities would be shielded, oriented downward, and on-demand lighting and/or with timers, to avoid unnecessary visual disturbance to wildlife. 3. All food-related trash items and microtrash, such as wrappers, cans, bottles, bottle tops, and food scraps will be disposed of in closed containers and routinely removed from the Project Area, at intervals of no less than once per week. 4. Excavations, spoils piles, unpaved access roadways, and parking and staging areas will be subject to dust control. 5. Herbicides application will be in accordance with existing laws and manufacturers' instructions (i.e., pesticide/herbicide labels). All herbicide chemicals used must be registered for use in the U.S. and California and must have a label certifying that the Federal Environmental Protection Agency (EPA) and the California Department of Pesticide Regulation (DPR) have approved the herbicide for use. Herbicides will not be sprayed within 50 feet of known occurrences of any other special-status plant occurrence or federal land. No rodenticides will be used on any project. 6. All open trenches, excavations, and/or holes more than 2 feet deep will be backfilled or covered at the end of each workday to prevent wildlife entrapment. If an excavation or hole is too large to cover, escape ramps will be installed at an incline ratio of no greater			

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	than 2:1 at least every 300 feet. All trenches and excavations will be inspected for the presence of wildlife each day prior to the start of work. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. 7. All straight construction pipes, culverts, or similar structures with a diameter of 3.5-inches or greater that are stored at a construction site overnight will be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in any way. All bent pipe with a diameter of 3.5-inches or greater that cannot be visually inspected for wildlife with 100 percent certainty will be left in place and monitored by a Qualified Biologist using wildlife cameras and/or tracking material prior to being removed, capped, moved, or buried. If any wildlife is discovered inside a pipe, that section of pipe is not to be moved until the animal vacates the pipe on its own accord. 8. To enable SJKF and other wildlife to pass through the Project Area, any new perimeter fencing installed around project work areas, with the exception of where fencing is required to exclude wildlife from known hazards, will include a 4 to 6-inch opening between the fence and the ground or the fence will be raised 4 to 6 inches above the ground. The bottom of the fence fabric will be knuckled (wrapped back to form a smooth edge), if necessary, to protect wildlife from injury when passing underneath. The perimeter fencing would be installed outside of the BNLL exclusion fence. The BNLL exclusion fence is made to exclude reptiles and amphibians and will not keep SJKF from passing through. 9. All vertical tubes used in project construction and chain link fencing poles will be capped to avoid entrapment and death of special-status wildlife and birds.			

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	10. Discovery of State or federally listed species that are injured or dead will be reported immediately via telephone and within 24 hours in writing to CDFW and USFWS as relevant. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information, such as the cause of injury or death (if known). 11. All activity will use previously disturbed areas to the maximum extent feasible to minimize the amount of new disturbance in areas with existing natural lands. 12. Vehicle, equipment, and material storage will be limited to previously disturbed areas or predefined storage/laydown areas that are incorporated into work site limits. All concrete and asphalt debris will be removed from the Project Area to either a designated concrete or asphalt storage facility, or off site for recycling or proper disposal on completion of construction. 13. No vehicles or construction equipment will be parked within a water of the State, including any dry wash or drainage, nor shall vehicles or construction equipment cross, or travel within a water of the State, including any wash or drainage, where and when water is flowing. No materials will be stored within a Water of the State. 14. All construction equipment and construction personnel vehicles will be checked underneath prior to moving them, to ensure that no wildlife is under equipment/vehicles. If any individuals are detected beneath equipment or vehicles, the equipment or vehicles will be left in place until the wildlife moves out of harm's way on its own accord, as determined by a Qualified Biologist. 15. All tracked vehicles and other construction equipment entering the Project Area from outside of			

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	Kern County will be washed or maintained to be weed-free. 16. All washing of trucks, paint, equipment, or similar activities including concrete washout will occur in designated areas/facilities where runoff is fully contained for collection prior to off-site disposal. Wash water may not be discharged from the Project Area, must be stored in a manner that excludes sensitive wildlife species, and located at least 100 feet from any water of the State.			
MM-CUL-1/TCR-1 Discovery of Previously Unknown Cultural or Tribal Cultural Resources	In the event any potential tribal cultural resources, archaeological resources/materials, other cultural resources, or articulated or disarticulated human remains are discovered during ground disturbance or construction activities, Bidr shall cease any ground disturbing and construction activities within 50 feet of the find, or an agreed upon distance based on the Project Area and nature of the find. Work stoppage shall remain in place until the qualified archaeologist, or other designated on-stie specialist, determines the nature of the discovery, and evaluates the significance of the discovery and recommends appropriate treatment measures. Per CEQA Guidelines Section 15126.4(b)(3), Project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. If it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with CalGEM, which may include data recovery or other appropriate measures. CalGEM will consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Tribal cultural resources shall not be photographed nor be subjected to any	During all construction activities; upon discovery of previously unknown cultural or tribal cultural resources. Unanticipated discovery plan; report prepared by a qualified archaeologist documenting evaluation and/or additional treatment of the resource as applicable; on-site monitoring.	Bidr must submit the unanticipated discovery plan to CalGEM for review and approval. The report prepared by a qualified archaeologist documenting evaluation and/or additional treatment of the resource must be provided to CalGEM and the Southern San Joaquin Valley Information Center.	CalGEM

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	studies beyond such inspection as may be necessary to determine the nature and significance of the discovery. If the discovery is confirmed as potentially significant or a tribal cultural resource, an Environmentally Sensitive Area (ESA) will be established using fencing or other suitable material to protect the discovery during subsequent investigation. No ground-disturbing activities will be permitted within the ESA until the area has been cleared for construction. The exact location of the resources within the ESA must be kept confidential and measures shall be taken to secure the area from site disturbance and potential vandalism. If after consultation it is deemed appropriate, archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to CalGEM and the Southern San Joaquin Valley Information Center.			
MM-CUL-2/TRC-2 Unanticipated Discovery of Human Remains	If human remains or associated grave goods (e.g., non-human funerary objects, artifacts, animals, ash or other remnants of burning ceremonies) are uncovered during Project construction, Bidr shall immediately halt all ground disturbing work within 50 feet of the discovery or other agreed upon distance based on the Project Area and nature of the find; treat the remains with respect and dignity; contact the Kern County Coroner within 24 hours to evaluate the remains; and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5(e)(1), California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.8. The Kern County Planning and Natural Resources Department shall be notified concurrently. If the County Coroner determines the remains to be of	During all construction activities; upon unanticipated discovery of human remains. On-site monitoring.	Bidr must report any unanticipated discovery to Kern County Coroner and Kern County Planning and Natural Resources Department within 24 hours of the find. If the County Coroner determines the remains to be of Native American origin, the County Coroner shall contact the Native American Heritage	CalGEM; Kern County Planning and Natural Resources Department; Native American Heritage Commission

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	Native American origin, the County Coroner shall contact the Native American Heritage Commission within 24 hours of this determination, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill (AB) 2641). The Native American Heritage Commission shall designate a Most Likely Descendant for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendant regarding their recommendations, if applicable, taking into account the possibility of multiple humans remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et. seq.) directing identification of the next-of-kin will apply. Unless otherwise required by law, the stie of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act (Cal. Govt. Code § 6250 et seq.).		Commission within 24 hours of this determination.	
DF-EN-1	The Project would include energy- and fuel-efficient design features that would help minimize inefficient or wasteful use of energy and increase conservation during construction. For example, the proposed grading plan is designed to balance all earthwork on site, which would avoid truck trips that would have been required to haul-in fill materials to the site and haul-off of materials to be exported off-site. This would	--	--	CalGEM; Kern County Planning and Natural Resources Department

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	reduce fuel use, while also reducing temporary increases in noise and exhaust emissions. The grading plan and on-site construction equipment would also minimize impacts to the surrounding transportation network that would result from truck traffic associated with soil import/export and mobilization/demobilization.			
MM-EN-1 Energy Conservation	Bidr shall implement all of the following applicable energy conservation control measures during construction of the project: 1. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. 2. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available, and it is not feasible to use propane or natural gas.	During all construction activities. Compliance Monitoring Report; on-site monitoring.	Compliance Monitoring Report must be submitted to SJVAPCD.	SJVAPCD
RR-EN-1	Compliance with CARB anti-idling and emissions requirements specified in 13 C.C.R. § 2485	--	--	SJVAPCD
RR-EN-2	Compliance with CARB Off-Road Diesel Regulations as required by 23 C.C.R. § 2449	--	--	SJVAPCD
RR-GEO-1	Compliance with most recently adopted building codes	--	--	Kern County Public Works Department
RR-GHG-1	Compliance with Measure I-2 of the AB 32 Scoping Plan	--	--	SJVAPCD
RR-GHG-2	Compliance with the AB 32 Cap-and-Trade Program	--	--	SJVAPCD

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
RR-GHG-3	Compliance with SJVAPCD Rule 2260 (Registration Requirements for Equipment Subject to California's Oil and Gas Regulation)	--	--	SJVAPCD
RR-GHG-4	Compliance with SJVAPCD Rule 4409 (Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities)	--	--	SJVAPCD
RR-GHG-5	Compliance with federal New Source Performance Standards specified in 40 CFR Part 60	--	--	SJVAPCD
RR-GHG-6	Compliance with California Emission Standards for Off-road Compression-Ignition Engines as specified in 13 C.C.R. § 2423(b)(1).	--	--	SJVAPCD
MM-HAZ-1 WEAP BMP Training	Bidr's WEAP shall include all training requirements identified as Best Management Practices (BMPs) and include annual training for all field personnel (including employees, agents, and contractors). The WEAP shall include hazardous materials and hazardous waste management, and emergency preparedness, release reporting, and response requirements. The WEAP shall also include training regarding the recognition and protection of possible buried paleontological resources during construction, prior to the initiation of construction or ground-disturbing activities. Training shall inform construction personnel of the procedures to be followed upon the discovery of paleontological materials. These procedures include notification of a paleontological monitor upon an accidental discovery and cessation of all work at the site of discovery until written approval to proceed is provided by the monitor. All personnel shall be instructed that unauthorized collection or disturbance of fossils and artifacts is unlawful.	Prior to all construction activities. WEAP training records.	Bidr must submit record of WEAP training to CalGEM.	CalGEM

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
MM-HAZ-2 Spill Prevention	Bidr shall develop, maintain, and implement a SPCC Plan in compliance with 14 C.C.R. § 1722.9 and the Oil Pollution Prevention requirements of the Clean Water Act (40 CFR Part 112), and that includes the following measures to prevent, repair, and remediate accidental leaks and spills from oil and gas operations. 1. Construction activities shall be conducted to allow for easy clean-up of spills. Construction crews shall have sufficient tools, supplies, and absorbent and barrier materials to contain and recover spilled materials. 2. Fuels and lubricants shall be stored only at designated staging areas, at least 100 feet away from the edge of water bodies. Fuel and lubricant tanks shall have appropriate secondary spill containment (e.g., curbs), and all refueling, and lubrication equipment shall be restricted to upland areas at least 100 feet away from stream channels and wetlands. 3. Any fuel truck shall carry an oil spill response kit and spill response equipment at all times. 4. All routine equipment maintenance shall be performed at the well pad, and promptly collect and lawfully dispose of wastes at an authorized recycling, treatment, or disposal facility. 5. A sufficient supply of sorbent and barrier materials shall be maintained on construction sites, and sorbent and barrier materials shall also be utilized to contain runoff from contaminated areas. 6. Shovels and drums shall be stored at the well pad or be readily available. If small quantities of soil become	During all project activities; upon accidental leak and/or spill. Report immediately and thereafter monthly or at predetermined intervals; on-site monitoring.	Submit timely reports to CUPA, surface landowner, sensitive receptors located within 300 feet, and other applicable agencies.	CalGEM; CVRWQCB; Kern County Environmental Health Division

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	contaminated, hand tools such as shovels or other appropriate tools, shall be used to collect the soil and the material shall be stored in storage drums. Large quantities of contaminated soil may be bio-remediated on-site or at a designated remediation facility, subject to government approval, or collected utilizing heavy equipment, and stored in drums or other suitable containers prior to disposal. Should contamination occur adjacent to staging areas as a result of runoff, shovels and/or heavy equipment shall be utilized to collect the contaminated material. Contaminated soil shall be disposed of in accordance with state and federal regulations. 7. Above-ground tanks, valves and other equipment shall be visually inspected monthly and when the tank is refilled. Inspection records shall be maintained. Applicants shall periodically check tanks for leaks or spills. 8. Drain valves on all tanks shall be locked to prevent accidental or unauthorized discharges from the tank. 9. Equipment maintenance shall be conducted in staging areas or other suitable locations (i.e., maintenance shops or yards) to the extent practical. 10. Bidr shall notify the Kern County Environmental Health Division, Certified Union Program Agency (CUPA), surface landowner, and sensitive receptors located within 300 feet, of any hazardous materials/waste release immediately upon discovery, and to other applicable agencies as required by other laws. Bidr shall immediately contain the leak (e.g., by isolating or shutting down the leaking equipment),			

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	clean up contaminated media (e.g., soils), and repair the leak prior to recommencing operations. Bidr shall report the status and progress of the leak repair and remediation work to the County and the CUPA on monthly intervals or predetermined intervals until the repair has been completed. Contaminated media shall be analyzed according to 22 C.C.R. §§ 66261.21-66261.24 for determination of appropriate hazardous waste disposal. Hazardous Waste Determination procedures are provided in 22 C.C.R. § 66262.11. 11. If a release cannot be repaired or remediated within 48 hours, and has potential impact to sensitive receptors, Bidr shall incur costs to sample and analyze the potentially affected area, which may include soil, groundwater, outdoor or indoor air of sensitive receptors within 300 feet of the leak. Bidr shall pay all temporary relocation costs (e.g., housing, food, and transportation) for any exposed sensitive receptor until such time as the leak has been repaired and post-indoor air testing has been completed, as confirmed by identified agency having oversight of the remediation.			
MM-HAZ-3 Fire Prevention	Bidr shall implement the following measures: 1. Maintain firefighting apparatus and supplies required by the Kern County Fire Department. 2. Maintain a list of all relevant fire-fighting authorities for each work site. 3. Have available equipment to extinguish incipient fires and or construction of a fire break, such as: chemical fire extinguishers, shovels, axes, chain saws, etc.	During all construction activities. Compliance Monitoring Report; on-site monitoring.	Initial Compliance Monitoring Report must be submitted to Kern County within 30 days of Project implementation and annually thereafter.	Kern County Fire Department

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	4. Carry water or fire extinguishers and shovels in non-passenger vehicles in the field. 5. Have and maintain an adequate supply of fire extinguishers for welding, grinding, and brushing crews. 6. Protect individual safety to contain any fire that occurs and notify local emergency response personnel. 7. Remove any flammable wastes generated during oil and gas activities regularly. 8. Store all flammable materials used in oil and gas activities away from ignition sources and in approved containers. 9. Allow smoking only in designated smoking areas. 10. Prohibit smoking where flammable products are present and when the fire hazard is high. Train personnel regarding potential fire hazards and their prevention. 11. All internal combustion engines, stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order. 12. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. Said vehicle types shall maintain their factory-installed (type) muffler in good condition.			

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	13. Fire rules shall be posted on the Project bulletin board at the contractor's field office and areas visible to employees. 14. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials. 15. Personnel shall be trained in the practices of the Fire Safety Plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats.			
MM-HAZ-4 Hot Work Equipment	Although Bidr does not have a hot work program in place at the field, Bidr shall restrict the use of chainsaws, chippers, vegetation masticators, grinders, tractors, torches, and explosives at its locations, and ensure the sites where this equipment is used are equipped with portable or fixed fire extinguishers and/or a water tank, with hoses, fire rakes, and other tools to extinguish and or control incipient stage fires. The WEAP shall include fire prevention and response training for workers using these tools.	During all construction activities. Compliance Monitoring Report; on-site monitoring.	Initial Compliance Monitoring Report must be submitted to Kern County within 30 days of Project implementation and annually thereafter.	Kern County Planning and Natural Resources Department
RR-HAZ-1	Compliance with 14 C.C.R. § 1774.2, which requires a Pipeline Management Plan	--	--	CalGEM
RR-HAZ-2	Compliance with all Kern County Fire Codes	--	--	Kern County Fire Department
DF-HYDRO-1	Water used for drilling and dust suppression during construction would be obtained from the Belridge Water Storage District through a nearby operator and delivered by truck.	--	--	CalGEM; CVRWQCB
DF-HYDRO-2	The Project would involve construction of an earthen well pad but graded prior to drilling	--	--	CalGEM

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
MM-HYDRO-1 Stormwater BMPs	Bidr shall implement BMPs during construction and operation activities. All selected practices shall be shown on a drainage implementation plan and self-certified as complete and feasible by a licensed professional qualified in drainage and flood control issues. The following BMPs shall be implemented and shown on the drainage plan: 1. Utilizing established facilities design, and construction or similar standards as applicable appropriate (e.g., ASTM, API). 2. Implementing good housekeeping and maintenance practices. 3. Preventing trash, waste materials and equipment from construction storm water; 4. Maintaining the wellhead, compressors, tanks and pipelines in good condition without leaks or spills. 5. Designing and maintaining a graded pad with berms to not actively erode and discharge sediment; and 6. Maintaining vehicles in good working order. 7. Implementing spill prevention and response measures: 8. Utilizing preventative operating practices such as tank level monitoring, safe chemical handling and conducting regular inspections. 9. Developing and maintaining a spill response plan.	During all construction activities. Compliance Monitoring Report.	Initial Compliance Monitoring Report must be submitted to Kern County and CVRWQCB within 30 days of Project implementation and annually thereafter.	Kern County Planning and Natural Resources Department; CVRWQCB

Regulatory Requirement, Design Feature, and/or Mitigation Measure	Mitigation Description	Timing & Method of Verification	Reporting	Responsible Agency
	10. Conducting spill response training for employees and have a process to ensure contractors have the necessary training. 11. Maintaining spill response equipment on site. 12. Implementing material storage and management practices. 13. Preventing unauthorized access. 14. Utilizing "run-on" and "run-off" control berms and swales around all pad areas; and 15. Stabilizing exposed slopes through vegetation and other standard slope stability methods.			
RR-HYDRO-1	Compliance with stormwater discharge requirements as specified in 40 C.F.R. §122.26(c)(1)(iii)	--	--	CVRWQCB
RR-HYDRO-2	Bidr will obtain coverage under the Construction General Permit (Construction General Permit Order 2009-0009-DWQ, as amended by 2010-00014-DWQ and 2012-0006-DWQ) in advance of construction activity, if required	--	--	CVRWQCB
Tribal	The Cultural/Tribal resource mitigation measures are listed above.			
DF-UTL-1	Waste generated during drilling of the well would be trucked offsite for disposal in an approved landfill	--	--	CalGEM
DF-UTL-2	Soil cuttings and water generated during the well installation will be stored onsite pending waste profile analysis	--	--	CalGEM

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SECTION 6 List of Acronyms and Abbreviations

AB	Assembly Bill
bbl	Barrels
BLM	U.S. Bureau of Land Management
BMP	Best Management Practice
CAA	Clean Air Act
CalGEM	Geologic Energy Management Division
CARB	California Air Resources Board
C.C.R.	California Code of Regulations
C.F.R.	Code of Federal Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalent
dB	Decibel
dBA	A-weighted Decibel
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act of 1973
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
GHG	Greenhouse gas
HAP	Hazardous air pollutant
H_2S	Hydrogen sulfide
HCP	Habitat Conservation Plan
hr	Hour
IS	Initial Study
kWh	Kilowatt Hour
L_{dn}/DNL	Project Area Noise Exposure in terms of the Day Night Level
L_{eq}	Equivalent Continuous Noise Level

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MMRP	Mitigation Monitoring and Reporting Plan
mph	Miles per Hour
$MTCO_2e$	Metric Tons Carbon Dioxide Equivalent
MWh	Megawatt Hours
NAAQS	National Ambient Air Quality Standards
NOI	Notice of Intention
NO_x	Nitrogen oxides
NCCP	Natural Community Conservation Plan
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Services
PFYC	Potential Fossil Yield Classification
PG&E	Pacific Gas & Electric
PM	Particulate matter
PM_{10}	Respirable Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
ppb	Parts per billion
ppm	Parts per million
SJAS	San Joaquin Antelope Squirrel
SJVAPCD	San Joaquin Valley Air Pollution Control District
SB	Senate Bill
SO_2	Sulfur Dioxide
SPCC	Spill Prevention Control and Countermeasures
SRA	State Responsibility Area
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compound
WEAP	Worker Environmental Awareness Program

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Appendix A Air Quality Impact Analysis

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Consultants, Inc.

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Air Quality Impact Analysis

Project Title

Exploratory Well Project –
South of McDonald Anticline Oil Field

Project Location

Section 29 of Township 28S, Range 20E
County of Kern, California
APN: 085-170-09

November 29, 2023
Updated August 20, 2024

Submitted to:

BIDR, LLC.

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1.0 INTRODUCTION

This Air Quality Impact Analysis (AQIA) identifies the potential impacts on air quality resulting from the proposed new well drill project on a pad that is situated within the northwest quarter of APN 085-170-09. The proposed project occupies approximately 2.1 gross acres of the 40 acre parcel.

The project site is located within the County of Kern and is in the San Joaquin Valley Air Basin (SJVAB). The SJVAB is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD).

This document was prepared using methodology described in the San Joaquin Valley Unified Air Pollution Control District's (SJVUAPCD's) *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI), March 19, 2015 Revision.

2.0 PROJECT DESCRIPTION

The Project site occupies 2.1 gross acres (APN 085-170-09) and is currently zoned A (Agricultural). The proposed project is limited to one well and associated crude oil production facility. The Project site is located west of the Highway 33 and Seventh Standard Road intersection in the northwest region of Kern County. The Project was assessed as if it would be developed in one phase. This assessment examines the projected gross impacts to air quality posed by this Project and to the San Joaquin Valley Air Basin to determine whether or not the Project remains below established air quality thresholds of significance.

Table 2-1: Assessor's Parcel Numbers and Area for Project Site

Assessor's Parcel Number	Acreage	Site Acreage
085-170-09	40	2.10
Total Acreage	**40**	**2.10**

3.0 AIR QUALITY STANDARDS

There are three categories of air pollutants that are regulated by federal, State, and/or regional governmental agencies: criteria pollutants; hazardous air pollutants (HAPs), and greenhouse gases (GHGs). These air pollutants, which are emitted as a result of everyday activities, can pose significant health and environmental risks. The following provides a discussion of each air pollutant category.

3.1 Criteria Pollutants

The Federal Clean Air Act (FCAA) of 1970, and the subsequent Federal Clean Air Act Amendments (FCAAA) of 1977 and 1990, required the establishment of National Ambient Air Quality Standards (NAAQS) for widespread pollutants considered harmful to public health and the environment. These pollutants are commonly referred to as criteria pollutants. The NAAQS establish acceptable pollutant concentrations which may be equaled continuously or exceeded only once per year. The California Ambient Air Quality Standards (CAAQS) are limits set by the California Air Resources Board (CARB) that cannot be equaled or exceeded. An air pollution control district must prepare an Air Quality Attainment Plan if the standards are not met. The NAAQS and CAAQS are shown in Table 3-1.

The following is a summary of the characteristics of the criteria pollutants and their potential physical and health effects.

Ozone Emissions - Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The ground level, or "bad" ozone layer, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up where it meets the second layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically nitrogen oxide (NO_x) and reactive organic gases (VOC). Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

In 1994, approximately 50 million people lived in counties with air quality levels above the EPA's health-based national air quality standard. The highest levels of ozone were recorded in Los Angeles, closely followed by the San Joaquin Valley. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the northeastern United States.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

Table 3-1: Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	9.0 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m³		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990 — California Air Resources Board (5/4/16)

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* Note: Fine Particulate Matter (PM2.5) Federal standard changed to 9 ug/m3.

California Ambient Air Quality Standards[a]		
Pollutant	**Averaging Time**	**Concentration**
Ozone	8 Hour	0.070 ppm (137 $\mu g/m^3$)
	1 Hour	0.09 ppm (180 $\mu g/m^3$)
Carbon Monoxide	8 Hour	9 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)
Nitrogen Dioxide	Annual Arithmetic Mean	0.030 ppm (56 $\mu g/m^3$)
	1 Hour	0.18 ppm (338 $\mu g/m^3$)
Sulfur Dioxide	24 Hour	0.04 ppm (105 $\mu g/m^3$)
	1 Hour	0.25 ppm (655 $\mu g/m^3$)
PM 10	Annual Arithmetic Mean	20 $\mu g/m^3$
	24 Hour	50 $\mu g/m^3$
PM 2.5	Annual Arithmetic Mean	12 $\mu g/m^3$
	24 Hour	none
Sulfates	24 Hour	25 $\mu g/m^3$
Lead	30 Day Average	1.5 $\mu g/m^3$
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu g/m^3$)
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 $\mu g/m^3$)
Visibility Reducing particles	8 Hour	(see below[b])
ppm=parts per million	mg/m^3=milligrams per cubic meter	$\mu g/m^3$=micrograms per cubic meter

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Health Effects

While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as: forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children inhale more air per pound of body weight than adults and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant; it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard could lead to lung inflammation and lung tissue damage and a reduction in the amount of air inhaled into the lungs.

Particulate Matter (PM10 and PM2.5) - Particulate Matter: Also known as particle pollution or PM, is a complex mixture of extremely small particles and liquid droplets. In the western United States, there are sources of PM in both urban and rural areas. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. The composition of PM can also vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM. EPA groups particle pollution into three categories based on their size and where they are deposited:

> "Inhalable coarse particles ($PM_{2.5-10}$)," such as those found near roadways, and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5-10}$ is deposited in the thoracic region of the lungs.
>
> "Fine particles ($PM_{2.5}$)," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
>
> “Ultrafine particles (UFP),” are very, very small particles less than 0.1 micrometers in diameter largely resulting from the combustion of fossils fuels, meat, wood and other hydrocarbons. While UFP mass is a small portion of $PM_{2.5}$, their high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to their mass.

$PM_{2.5-10}$, $PM_{2.5}$, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM 10 sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust in the Valley.

Health Effects

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children.

Carbon Monoxide (CO) - Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust that contributes more than two-thirds of all CO emissions nationwide. In urban areas, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO.

Health Effects

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood and thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected, but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin (COHb) in the blood. Health effects observed may include: an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

Nitrogen Oxides (NO_x) - Nitrogen oxides (NO_x) is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. NO_x is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NO_x is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

Health Effects

NO_x is an ozone precursor that combines with VOC to form ozone. Refer to the discussion of ozone above regarding the health effects of ozone.

Direct inhalation of NO_x can also cause a wide range of health effects. NO_x can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide (NO_2) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NO_x are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_x can also impair visibility.

NO_x is a major component of acid deposition in California. NO_x may affect both terrestrial and aquatic ecosystems. NO_x in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

NO_2 is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of NO_2 include experimental studies on animals, controlled laboratory studies on humans, and observational studies. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO_2, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NO_x contributes to a wide range of environmental effects both directly and when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms.

Sulfur Dioxide (SO_2) - The major source of sulfur dioxide (SO_2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining, and shipping.

Health Effects

High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO_2, in conjunction with

high levels of particulate matter, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO_2 also is a major precursor to $PM_{2.5}$, which is a significant health concern and a main contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

Lead (Pb) - Lead, a naturally occurring metal, can be a constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Since this has occurred, the ambient concentrations of lead have dropped dramatically.

Health Effects

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

Visibility-Reducing Particles - This standard is a measure of visibility. The entire State of California has been labeled unclassified for visibility. CARB has not established a method for measuring visibility with the necessary accuracy or precision needed to designate areas in the State as attainment or nonattainment.

Sulfates - Sulfates are particulate products from combustion of sulfur-containing fossil fuels. When sulfur dioxide (SO_2) is exposed to oxygen, it oxidizes into sulfates (SO_3 or SO_4). Through a variety of chemical and photochemical reactions in the atmosphere, the sulfates can combine with ammonia to form ammonium sulfate particulate. Data collected in the SJVAB has demonstrated that levels of sulfates are significantly less than the applicable health standards. However, sulfates are still one of the wintertime particulate concerns due to secondary formation of ammonium sulfate.

Sulfates (SO_4) are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or Hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California, due to regional meteorological features.

Health Effects

The health effects associated with SO_2 and sulfates more commonly known as sulfur oxides (SO_x) include respiratory illnesses, decreased pulmonary disease resistance, and aggravation of cardiovascular diseases. When acidic pollutants and particulates are also present, sulfur dioxide tends to have an even more toxic effect.

Increased particulate matter derived from sulfur dioxide emissions also contributes to impaired visibility. In addition to particulates, SO_3 and SO_4 are also precursors to acid rain. In the SJVAB,

SO_x and NO_x are the leading precursors to acid rain. Acid rain can lead to corrosion of man-made structures and cause acidification of water bodies.

The State standard for SO_2 is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility and, because they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide - Hydrogen sulfide (H_2S) emissions are often associated with geothermal activity, oil, and gas production, refining, sewage treatment plants, and confined animal feeding operations. H_2S in the atmosphere will likely oxidize into SO_2 that can lead to acid rain.

Health Effects

Exposure to low concentrations of H_2S may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Exposure to higher concentrations (above 100 ppm) can cause olfactory fatigue, respiratory paralysis, and death. Brief exposures to high concentrations of H_2S (greater than 500 ppm) can cause a loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in many individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of H_2S (0.00011 ppm to 0.00033 ppm). Deaths due to breathing large amounts of H_2S have been reported in a variety of different work settings, including sewers, animal processing plants, waste dumps, sludge plants, oil and gas well drilling sites, and tanks and cesspools. Occupational Safety and Health Administrations (OSHA) has the primary responsibility for regulating workplace exposure to H_2S. The entire SJVAB is unclassified for H_2S.

Vinyl Chloride - Vinyl chloride monomer is a sweet-smelling, colorless gas at ambient temperature. Landfills, publicly-owned treatment works, and polyvinyl chloride (PVC) production are the major identified sources of vinyl chloride emissions in California. PVC can be fabricated into several products, such as PVC pipes, pipe fittings, and plastics. In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers. There are currently no adopted ambient air standards for vinyl chloride.

Health Effects

Short-term exposure to vinyl chloride has been linked with the following acute health effects (Agency for Toxic Substances and Disease Registry 2004; U.S. Department of Health and Human Services 1993):

- Acute exposure of humans to high levels of vinyl chloride via inhalation in humans has resulted in effects on the central nervous system, such as dizziness, drowsiness, headaches, and giddiness.
- Vinyl chloride is reported to be slightly irritating to the eyes and respiratory tract in humans. Acute exposure to extremely high levels of vinyl chloride has caused loss of consciousness, lung and kidney irritation, and inhibition of blood clotting in humans and cardiac arrhythmias in animals.
- Tests involving acute exposure of mice have shown vinyl chloride to have high acute toxicity from inhalation exposure.

Long-term exposure to vinyl chloride concentrations has been linked with the following chronic health effects (Agency for Toxic Substances and Disease Registry 2004; U.S. Department of

Health and Human Services, Registry of Toxic Effects of Chemical Substances [RTECS, online database] 1993; U.S. Department of Health and Human Services 1993; U.S. Environmental Protection Agency 2000):

- Liver damage may result in humans from chronic exposure to vinyl chloride, through both inhalation and oral exposure.

A small percentage of individuals occupationally exposed to high levels of vinyl chloride in air have developed a set of symptoms termed "vinyl chloride disease," which is characterized by Raynaud's phenomenon (fingers blanched and numbness and discomfort are experienced upon exposure to the cold), changes in the bones at the end of the fingers, joint and muscle pain, and scleroderma-like skin changes (thickening of the skin, decreased elasticity, and slight edema).

Central nervous system effects (including dizziness, drowsiness, fatigue, headache, visual and/or hearing disturbances, memory loss, and sleep disturbances) as well as peripheral nervous system symptoms (peripheral neuropathy, tingling, numbness, weakness, and pain in fingers) have also been reported in workers exposed to vinyl chloride.

Reactive Organic Gases (VOC) - Reactive Organic Gases (VOC) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. VOCs are emitted by a wide array of products numbering in the thousands. Examples include: paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions.

Organic chemicals are widely used as ingredients in household products. Paints, varnishes, and wax all contain organic solvents, as do many cleaning, disinfecting, cosmetic, degreasing, and hobby products. Fuels are made up of organic chemicals. All of these products can release organic compounds while you are using them, and, to some degree, when they are stored.

Health Effects

The ability of organic chemicals to cause health effects varies greatly from those that are highly toxic, to those with no known health effect. As with other pollutants, the extent and nature of the health effect will depend on many factors including level of exposure and length of time exposed. Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory impairment are among the immediate symptoms that some people have experienced soon after exposure to some organics. At present, not much is known about what health effects occur from the levels of organics usually found in homes. Many organic compounds are known to cause cancer in animals; some are suspected of causing, or are known to cause, cancer in humans.

3.2 Toxic Air Contaminants

Toxic pollutants in California are identified as toxic air contaminates (TACs) and are listed in the Air Toxic "Hot Spots" and Assessment Act's "Emissions Inventory Criteria and Guideline Regulation"(AB2588). A subset of these pollutants has been listed by the Office of Environmental Health Hazard Assessment (OEHHA) as having acute, chronic, and/or carcinogenic effects, as defined by California Health and Safety Code (CH&SC) §39655.

Governor Deukmejian signed AB2588 into law in 1987. The purpose of the Act is to inventory the emissions of air toxics, determine if these emissions are high enough to expose individuals or groups to significant health risk, and to inform the public where there is a significant health risk. The SJVUAPCD has established the following levels of risk determined to be significant for purposes of AB2588:

1. A cancer risk exceeding 10 in 1 million, or
2. A ratio of the chronic or acute exposure to the reference exposure level ("hazard index") exceeding 1.0.

The requirements of AB2588 apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to the toxic emission inventory requirements of AB 2588 must prepare and submit toxic emission inventory plans and reports and periodically update those reports.

3.3 Greenhouse Gas Emissions

For the purposes of the following discussion, greenhouse gases are considered as the cause of global climate change. Climate change is a shift in the "average weather" that a given region experiences. Regional "average weather" is measured by changes in temperature, wind patterns, precipitation, and storms. Global climate is the change in the climate of the earth as a whole.

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent GHG contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and hydrofluorocarbons (HFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate.

Anthropogenic (caused or produced by humans) emissions of these GHG in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or global climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's GHG emissions, followed by electricity generation. Emissions of CO_2 and nitrogen oxide (NO_x) are byproducts of fossil fuel combustion. Emissions of CH_4 result from off-gassing associated with agricultural practices and landfills. Sinks of CO_2 include uptake by vegetation and dissolution into the ocean.

An individual project cannot generate enough GHG emissions to effect a discernible change in the global climate. However, a proposed project may participate in this potential impact by its incremental contribution combined with the cumulative contribution combined with the cumulative increase of all other sources of GHGs which, when taken together, may influence global climate change.

The following provides a description of each of the GHGs and their global warming potential:

Water Vapor (H_2O) - Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved in is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (i.e., rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there are also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more

of it will eventually condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide (CO_2) - The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s, each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). However, the Intergovernmental Panel on Climate Change (IPCC), established by the United Nations in 1988, indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. The IPCC projects that, left unchecked, the concentration of CO_2 in the atmosphere would increase to a minimum of 540 ppm by the year 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least two degrees Celsius.

Methane (CH_4) - CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years) compared to some other GHGs such as CO_2, N_2O, and Chlorofluorocarbons (CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric (man-made) sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide (N_2O) - Concentrations of N_2O began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant (i.e., in whipped cream bottles), in potato chip bags, in rocket engines, and in racecars.

Chlorofluorocarbons (CFCs) - CFCs are gases formed synthetically by replacing all Hydrogen atoms in CH_4 or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs have no natural source, but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken. This effort was extremely successful and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons (HFCs) - HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, hydrofluorocarbons are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons (PFCs) - Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds.

Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride (SF_6) - SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols - Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel with sulfur within it is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Although particulate matter regulation has been lowering aerosol concentrations in the United States, global concentrations are likely increasing.

Global Warming Potential

GHGs have varying global warming potentials (GWPs) and are one type of simplified index, based upon radiative properties that can be used to estimate the potential future impacts of emissions of different gases on the climate in a relative sense. GWP is based on a number of factors, including radiative efficiency (heat-absorbing ability) of each gas relative to that of CO_2, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO_2.

The EPA defies GWP as “the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas,” the reference gas in this case being CO_2. One ton of CO_2 equivalent (or CO_2e) is essentially the emissions of the gas multiplied by the GWP. The CO_2 equivalent is a good way to assess emissions because it gives weight to the GWP of the gas. A summary of the atmospheric lifetime and the GWP of selected gases are summarized in Table 3-2. As shown in Table 3-2, the GWP of GHGs ranges from 1 to 23,900.

Data compiled by the United Nations Framework Convention on Climate Change (UNFCCC) indicates that, in 2006, total worldwide GHG emissions were 22,170 million metric tons of carbon dioxide equivalent ($MMTCO_2e$), emissions in the U.S. were 7054.2 $MMTCO_2e$, and emissions in California were 483.9 $MMTCO_2e$ (source: United Nations Framework Convention on Climate Change 2009 and California Air Resources Board 2009).

Table 3-2: Global Warming Potentials and Atmospheric Lifetimes

Gas	Atmospheric Lifetime	Global Warming Potential (100-Year Horizon)
Carbon Dioxide (CO_2)		1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1	124
PFC: Tetrafluoromethane	50,000	7,390
PFC: Hexafluoroethane	10,000	12,200
Sulfur Hexafluoride	3,200	22,800

Source: California Air Resources Board based on the Intergovernmental Panel on Climate Change fourth assessment report (AR4). June 22, 2018.

HFC = Hydrofluorocarbons

PFC = Perfluorocarbons

4.0 ENVIRONMENTAL SETTING AND CLIMATE

4.1 Project Location and Setting

The project site is located within the County of Kern and is in the San Joaquin Valley Air Basin (SJVAB). The SJVAB is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD).

This AQIA identifies the potential impacts on air quality resulting from the proposed project to drill one well and the associated crude oil processing facility, consisting of three tanks, piping, and a heater. The proposed project occupies 2.10 gross acres.

The project site is located in northwest Kern County. The elevation is approximately 1,063 ft above sea level. (Exhibit F)

4.2 Climate

According to US Climate Data, average temperatures in Kern County range from 69 degrees Fahrenheit (F) to 97 degrees F in July to 39 degrees F to 56 degrees F in January. The wet season is generally from December to March, with an annual average of 6.45 inches of rainfall.

4.3 San Joaquin Valley Air Basin

The California Air Resources Board (CARB) has divided California into 15 regional air basins according to topographic features. The project site is located within the south-western portion of the San Joaquin Valley Air Basin (SJVAB). The SJVAB is the southern half of California's Central Valley and is approximately 250 miles long and averages 35 miles wide. The SJV is bordered by the Sierra Nevada Mountains in the east (8,000 to 14,491 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 7,981 feet in elevation). The SJVAB is under the jurisdictional authority of San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD).

Table 4-1 contains the ambient air quality classifications for the SJVUAPCD. The CCAA requires that all reasonable stationary and mobile source control measures be implemented in nonattainment areas to help achieve a mandated five-percent per year reduction in ozone precursors and to reduce population exposures.

Table 4-1: Ambient Air Quality Classifications

San Joaquin Valley Attainment Status

Pollutant	Designation/Classification	
	Federal Standards[a]	State Standards[b]
Ozone - One hour	No Federal Standard[f]	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Extreme[e]	Nonattainment
PM 10	Attainment[c]	Nonattainment
PM 2.5	Nonattainment[d]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

[a] See 40 CFR Part 81

[b] See CCR Title 17 Sections 60200-60210

[c] On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.

[d] The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).

[e] Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

[f] Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

Source: www.valleyair.org (02/03/2023)

Notes:

National Designation Categories

Nonattainment Area: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Unclassified/Attainment Area: Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant or meets the national primary or secondary ambient air quality standard for the pollutant.

State Designation Categories

Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

Attainment: A pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a three-year period.

Nonattainment: A pollutant is designated nonattainment if there was at least one violation of a State standard for that pollutant in the area.

Nonattainment/Transitional: A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the standard for the pollutant.

4.4 Existing Air Quality

CARB has established and maintains, in conjunction with the local air districts, a network of sampling stations (called the State and Local Air Monitoring Stations Network [SLAMS]), which monitor ambient pollutant levels. The SLAMS network has 38 stations within the SJVAB that monitor various pollutant concentrations. (Exhibit E)

The closest active monitoring station is located at Shafter (Site# 15248 – Walker Street), approximately 30 miles east of the site. Due to the proximity to the site, this station provides the most applicable air quality monitoring data available for NOx. For the PM10 monitoring data, the monitoring station located at Oildale (Site #15243 – 3311 Manor Street) in Bakersfield, which is about 45 miles to the east of the site, provides the most applicable data. For the PM2.5 monitoring data, the monitoring station located at Golden State Highway (Site #15256 – 2820 M Street) in Bakersfield, which is about 44 miles to the east of the site, provides the most applicable data.

Table 4-2: Maximum Pollutant Levels

Pollutant	Averaging Time	Units	Maximums			Standards	
			2020	2021	2022	State	National
Nitrogen Dioxide (NO_2)	1 hour	ppb	40 (CA) 40.9 (Fed)	47 (CA) 47.8 (Fed)	34 (CA) 34.9 (Fed)	40	32
	Annual Average	ppb	8 (CA) — (Fed)	8 (CA) — (Fed)	7 (CA) — (Fed)	8	8
Particulates (PM10)	24 hour	$\mu g/m^3$	277.3 (CA) 517.2 (Fed)	423.0 (CA) 421.4 (Fed)	146.3 (CA) 149.4 (Fed)	50	150
	Annual Average	$\mu g/m^3$	— (CA) 57.3 (Fed)	49.4 (CA) 50.0 (Fed)	45.0 (CA) 44.9 (Fed)	20	—
Particulates (PM2.5)	24 hour	$\mu g/m^3$	150.2 (CA) 150.2 (Fed)	78.5 (CA) 78.5 (Fed)	58.6 (CA) 58.6 (Fed)	—	35
	Annual Average	$\mu g/m^3$	— (CA) 19.4 (Fed)	— (CA) 17.8 (Fed)	— (CA) 16.6 (Fed)	12	9

Source: CARB Website, (08/20/2024)
Notes: ppb = parts per billion
$\mu g/m^3$ = micrograms per cubic meter
— = not reported

4.5 Sensitive Receptors

Some groups of people are more affected by air pollution than others. CARB has identified the following people who are likely to be affected by air pollution: children under 14; the elderly over 65; athletes; and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks.

The proposed project has identified the nearest residential, business and sensitive receptors.

- Residence – nearest residence 2,347 meters to the south
- Business – nearest office 2,347 meters to the south
- Sensitive – nearest school 6,800 meters to the east

The majority of the potential ambient air quality emissions from this proposed project are related to short-term construction emissions. The proposed project is not expected to result in localized

impacts, such as CO “Hot Spots”, and therefore, is not expected to impact nearby sensitive receptors. Therefore, the impact to sensitive receptors is considered less than significant, as detailed in the Traffic Statement (Exhibit I).

5.0 REGULATORY SETTING

5.1 Air Quality Regulations

Air quality within southern Kern County is addressed through the efforts of various federal, State, and regional and local government agencies. These agencies work together, as well as individually, to improve air quality through legislation, regulations, planning, and policy-making aimed at regulating air pollutants of concern as defined under the Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA). The agencies and legislation responsible for improving air quality within the SJVAB are discussed below.

Federal

The FCAA governs air quality in the United States and is administered by the U.S. Environmental Protection Agency (EPA). In addition to administering the FCAA, the EPA is also responsible for setting and enforcing the NAAQS for atmospheric pollutants as discussed above. As a part of its enforcement responsibilities, the EPA requires each state with non-attainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution. These measures need to incorporate performance standards and market-based programs that can be met within the timeframe identified in the SIP.

State

CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs in California. In this capacity, the CARB conducts research, sets CAAQS, compiles emission inventories, develops suggested control measures, and prepares the SIP. For example, the CARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hair spray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. In addition, CARB oversees the functions of the local air pollution control districts and the air quality management districts, which in turn administer air quality at the regional and county level.

Regional

The SJVUAPCD is the primary agency responsible for comprehensive air pollution control in the SJVAB. The SJVUAPCD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines. In addition, the SJVUAPCD is tasked with addressing the State’s requirements established under the CCAA (e.g., bringing the SJVAB into attainment).

Local

Local jurisdictions, including City of Bakersfield and the Kern Council of Governments (KernCOG), have the authority and responsibility to reduce air pollution through its policies and decision-making authority. Specifically, Kern County is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. As a result, the currently adopted

Kern County General Plan and other planning documents identify goals, policies, and implementation measures that help Kern County contribute to efforts to improve regional air quality.

It should be noted that the City has developed a General Plan dated September 2009 containing a Conservation Element which includes applicable goals, objectives, or policies that directly address air quality in the City. The Conservation Element contains objectives that promote the conservation of natural and energy resources as well as energy efficiency and the use of renewable energy resources which would have beneficial effects on the City's air quality.

5.2 Greenhouse Gas Emissions

The regulatory setting related to GHG emissions and global climate change includes international, federal, state, regional, and local governmental agencies and organizations and their respective regulations as discussed below.

International

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHG in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere, consisting of CFCs, halons, carbon tetrachloride, and methyl chloroform, were to be phased out, with the first three by the year 2000 and methyl chloroform by the year 2005.

Federal

The EPA is responsible for implementing federal policy to address global climate change. The federal government administers a wide array of public-private partnerships to reduce GHG intensity generated by the United States. These programs focus on energy efficiency, renewable energy, CH_4, and other non-CO_2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The EPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions.

In February 2002, the federal government announced a strategy to reduce the GHG intensity of the American economy by 18 percent over the 10-year period from 2002 to 2012. GHG intensity measures the ratio of GHG emissions to economic output. Meeting this commitment will prevent the release of more than 100 million metric tons of carbon-equivalent emissions to the atmosphere (annually) by 2012 and more than 500 million metric tons (cumulatively) between 2002 and 2012. This strategy has three basic objectives: slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation.

As discussed above, the EPA is responsible for setting and enforcing the NAAQS for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November

29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate GHG emissions, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other GHGs as pollutants under the Section 202(a) of the federal Clean Air Act (CAA). The U.S. Supreme Court decision resulted from a petition for rulemaking under Section 202(a) filed by more environmental, renewable energy, and other organizations.

On April 17, 2009, the EPA Administrator signed a proposed endangerment finding that GHGs contribute to air pollution that may endanger public health or welfare. The EPA held a 60-day public comment period during the review of the proposed finding that ended June 23, 2009. During the public comment period, over 380,000 comments were received in the form of written comments and through testimony provided at two public hearings. The EPA reviewed, considered, and incorporated the public comments into the final findings that were issued January 14, 2010.

The EPA's proposed endangerment finding stated that, "In both magnitude and probability, climate change is an enormous problem. The greenhouse gases that are responsible for it endanger both the health and public welfare within the meaning of the Clean Air Act." These findings were based on careful consideration of the full weight of scientific evidence and the public comments that were received.

The specific GHG regulations that have been adopted by the EPA are:

- 40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule. This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO_2e emissions per year. In addition, the reporting of emissions is required of owners of SF6 and PFC-insulated equipment when the total nameplate capacity of these insulating gases is above 17,280 pounds.
- 40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule. This rule was mandated to apply Prevention of Significant Deterioration (PSD) requirements to facilities whose CO_2e emissions exceed 75,000 tons per year.

These rules are not applicable to the proposed project.

State

Assembly Bill 1493

Assembly Bill (AB) 1493 is the successor bill to AB 1058 and was enacted on July 22, 2002 by Governor Gray Davis. AB 1493 mandates that CARB develop and implement GHG limits for vehicles beginning in model Year 2009. Subsequently, as directed by AB 1493, on September 24, 2004, CARB approved regulations limiting the amount of GHG that may be released from new passenger cars, sport utility vehicles, and pickup trucks sold in California in model Year 2009. The automobile industry subsequently sued and claimed AB 1493 was a measure designed to impose gas mileage standards on automobiles. A federal district court ruled on December 12, 2007 that the State and federal laws could co-exist. However, on December 19, 2007, the EPA denied California's request for the necessary waiver to implement its law, claiming that local emissions had little effect on global climate change and that the conditions in California were not "compelling and extraordinary" as required by law. California intends to sue the EPA to force reconsideration, given the precedent of Massachusetts v. EPA[1], which as discussed above, ruled that CO_2 was an air pollutant that the EPA had authority to regulate. Arizona, Colorado, Connecticut, Florida, Maine, Maryland, Massachusetts, New Jersey, New

[1] Massachusetts v. Environmental Protection Agency, 549 U.S.; 127 S. Ct. 1438 (2007).

Mexico, New York, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, and Washington are also interested in adopting California's automobile emissions standards.

Executive Order S-20-04

In December 2004, Governor Schwarzenegger signed Executive Order S-20-04 (The California Green Building Initiative) establishing the State's priority for energy and resource-efficient high performance buildings. The Executive Order sets a goal of reducing energy use in State-owned and private commercial buildings by 20 percent in 2015 using non-residential Title 20 and 24 standards adopted in 2003 as the baseline. The California Green Building Initiative also encourages private commercial buildings to be retrofitted, constructed, and operated in compliance with the State's Green Building Action Plan.

Executive Order S-3-05

In June 2005, Governor Schwarzenegger issued Executive Order S-3-05 that established California's GHG emissions reduction targets. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050. In addition, to meet these reduction targets, the Executive Order directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate with the Secretary of the Business, Transportation and Housing Agency, the Secretary of the Department of Food and Agriculture, the Secretary of the Natural Resources Agency, the Chairperson of CARB, the Chairperson of the Energy Commission, and the President of the Public Utilities Commission. The Secretary of CalEPA leads this Climate Action Team (CAT) made up of representatives from these agencies as well as numerous other Boards and Departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Reduction Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide GHG targets that were established in the Executive Order and further defined under the Global Warming Solutions Act of 2006 (Assembly Bill 32).

The first Climate Action Team (CAT) Assessment Report to the Governor and the Legislature was released in March 2006 and will be updated and issued every two years. The 2006 CAT Assessment Report has been followed by the release of the 2008 CAT Assessment Report. The 2008 CAT Assessment Report expands on the policy oriented 2006 CAT Assessment Report and provides new information and scientific findings. A discussion of the GHG emission reduction strategies provided in the 2006 CAT Assessment Report is provided further below.

Assembly Bill 32

The Legislature enacted AB 32, the California Global Warming Solutions Act of 2006 (Nunez, 2006), which Governor Schwarzenegger signed on September 27, 2006 to further the goals of Executive Order S-3-05. AB 32 represents the first enforceable statewide program to limit greenhouse gas emissions from all major industries with penalties for noncompliance. CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. The foremost objective of CARB is to adopt regulations that require the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. The first GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020 (a reduction of approximately 25 percent from forecast emission levels). CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost effective GHG emission reductions by updating with scoping plans. Since 2008, there have been two updates to the Scoping Plan in 2013 and 2017. AB 32 allows CARB to adopt market based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance

and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market based compliance mechanism adopted. In order to advise CARB, it must convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee. CARB has approved a 2020 emissions limit of 427 metric tons of CO_2 equivalent and has updated, through the 2017 scoping plan, which has a 2030 target of 40% emission reduction below 1990 levels.

Executive Order S-1-07

Under the AB 32 Scoping Plan, the Board identified the Low Carbon Fuel Standard (LCFS) as one of the nine discrete early action measures to reduce California's greenhouse gas (GHG) emissions that cause climate change. The LCFS is a key part of a comprehensive set of programs in California to cut GHG emissions and other smog-forming and toxic air pollutants by improving vehicle technology, reducing fuel consumption, and increasing transportation mobility options. The LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits.

The Board approved the LCFS regulation in 2009 and began implementation on January 1, 2011. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. The LCFS standards are expressed in terms of the "carbon intensity" (CI) of gasoline and diesel fuel and their respective substitutes. The program is based on the principle that each fuel has "life cycle" greenhouse gas emissions that include CO_2, CH_4, N_2O, and other GHG contributors. This life cycle assessment examines the GHG emissions associated with the production, transportation, and use of a given fuel. The life cycle assessment includes direct emissions associated with producing, transporting, and using the fuels, as well as significant indirect effects on GHG emissions, such as changes in land use for some biofuels. The carbon intensity scores assessed for each fuel are compared to a declining CI benchmark for each year. Low carbon fuels below the benchmark generate credits, while fuels above the CI benchmark generate deficits. Credits and deficits are denominated in metric tons of GHG emissions. Providers of transportation fuels must demonstrate that the mix of fuels they supply for use in California meets the LCFS carbon intensity standards, or benchmarks, for each annual compliance period.

California Air Pollution Control Officers Association “White Paper”

In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a “white paper” (CEQA and Climate Change) on evaluating GHG emissions under CEQA. The CAPCOA “white paper” strategies serve as guidelines and have not been adopted by any regulatory agency. The “white paper” serves as a resource to assist lead agencies in evaluating GHG emissions in environmental information documents. The methodologies used in this GHG emissions analysis are consistent with the CAPOCA guidelines.

The CAPCOA “white paper” specifically includes a disclaimer on the first page that states:

> This paper is intended to serve as a resource, not a guidance document. It is not intended and should not be interpreted, to dictate the manner in which an air district or Lead agency chooses to address GHG emissions in the context of its review of projects under CEQA. This paper has been prepared at a time when California law has been recently amended by the Global Warming Solutions Act of 2006 (AB 32) and the full programmatic implications of this new law are not yet fully understood.

In addition, page 33 of the CAPCOA "white paper" provides the following statement:

> This threshold approach would require a project to meet a percent reduction target based on the average reductions needed from business-as-usual emissions for all GHG sources. Using the 2020 target, this approach would require all discretionary projects to achieve a 33 percent reduction from the projected business-as-usual emission from all GHG sources in order to be considered less than significant.

While significance was not determined based on a hypothetical "business as usual" standards, any mitigation measures identified in a project-specific CEQA analyses will utilize the 29 percent GHG standards identified in AB 32 which establishes a target reduction of GHG emissions to 1990 levels by the year 2020. State and federal regulations are constantly changing as more and more information is made available regarding GHG emissions and their impact on global climate change. Additionally, SB 375 which requires the development of a GHG emission reduction target for specific metropolitan areas have not been identified.

Senate Bill 97

Senate Bill (SB) 97 enacted in 2007 required the California Office of Planning and Research (OPR) to develop amendments to the California Environmental Quality Act (CEQA) Guidelines to address the effects of GHG emissions. OPR was required to prepare and transmit the recommended amendments to the Natural Resources Agency by July 1, 2009. On April 13, 2009, OPR submitted to the Secretary for Natural Resources its recommended amendments to the CEQA Guidelines for addressing GHG emissions as required by SB 97. The recommended amendments were developed to provide guidance to public agencies regarding the analysis of the effects of GHG emissions and mitigation provided in draft CEQA documents.

On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code Section 21083.05. Following a 55-day public review period, including two public hearings and responses to comments, the Natural Resources Agency proposed revisions to the text of the proposed amendments to the CEQA Guidelines.

On December 31, 2009, the Natural Resources Agency transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law. The Office of Administrative Law approved the amendments on February 16, 2010 and filed them with the Secretary of State for inclusion into the California Code of Regulations. The amendments became effective on March 18, 2010.

Assembly Bill 1358

In October 2008, Governor Schwarzenegger signed Assembly Bill 1358 (AB 1358 or the California Complete Streets Act of 2008). AB 1358 requires a city or county's general plan to identify how they will accommodate the circulation of all users of the roadway, including motorists, pedestrians, bicyclists, children, seniors, individuals with disabilities, and users of public transportation. The new general plan provisions would be required when the local government revises their circulation element. The accommodations under AB 1358 may include, but not be limited to, sidewalks, bike lanes, crosswalks, wide shoulders, medians, bus pullouts, and audible pedestrian signals.

Senate Bill 375

Senate Bill 375 (SB 375) enacted in August 2008 requires metropolitan planning organizations (MPOs) to include strategies for sustainable communities in their regional transportation plans. The purpose of SB 375 is to: reduce GHG emission reduction targets from automobiles and light trucks; require CARB to provide GHG emission reduction targets from the automobile and light truck sector for 2020 and 2035 by January 1, 2010; and update the regional targets until 2050. SB 375 requires certain transportation planning and programming activities to be consistent with the sustainable communities strategies contained in the regional transportation plan (RTP). In addition, the SB 375 requires affected regional agencies to prepare an alternative planning strategy to the sustainable communities' strategies if the sustainable communities' strategies are unable to achieve the GHG emission reduction targets.

The timeline for the implementation of SB 375 is as follows:

- January 1, 2009 - CARB adopts AB 32 Scoping Plan that includes the total reduction of carbon in million metric tons from regional transportation planning.
- January 31, 2009 - CARB appoints a Regional Targets Advisory Committee (RTAC) to recommend factors to be considered and methodologies to be used for setting reduction targets.
- September 30, 2009 - The RTAC must report its recommendations to the CARB.
- June 30, 2010 - CARB must provide draft targets for each region to review.
- September 30, 2010 - CARB must provide each affected region with a GHG emissions reduction target.
- October 1, 2010 - Beginning this date, MPOs updating their RTP will begin an eight-year planning cycle that includes the Sustainable Community Strategy (SCS).

Local

Kern Council of Governments

The Kern Council of Governments (KernCOG) is the Metropolitan Planning Organization (MPO) for Kern County. In addition, KernCOG is the Regional Transportation Planning Agency (RTPA) and the agency responsible for the Regional Housing Needs Allocation Plan (RHNA). In these roles, KernCOG is responsible for providing Kern County with the guidance documents identified in SB 375. The guidance documents are being developed in conjunction with and input from all cities within Kern County and the Kern County government. Future land use approvals will be the responsibility of the local governments and, therefore, those agencies would be responsible for ensuring conformance with the Sustainable Community Strategy (SCS) as it relates to the requirements of SB 375 and AB 32.

As discussed above, SB 375 was introduced as a result of AB 32, the climate change legislation signed into California law in 2006. SB 375 builds on the existing regional transportation planning process to connect the reduction of GHG emissions from cars and light trucks to land use and transportation policy. SB 375 requires all MPOs to update their Regional Transportation Plans (RTPs) so that resulting development patterns and supporting transportation networks can reduce GHG emissions by the target amounts set by CARB. Related to this, an additional component of KernCOG's responsibility under SB 375 is the development of a Sustainable Community Strategy (SCS) for Kern County.

KernCOG is working within the timeline and milestones established by the State legislation in SB 375 as discussed above. KernCOG has already initiated the regional planning, housing and transportation planning process into a strategy to meet the requirements of SB 375.

6.0 IMPACTS OF THE PROPOSED PROJECT

This document was prepared using methodology described in the San Joaquin Valley Unified Air Pollution Control District's (SJVUAPCD's) *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI), March 19, 2015 Revision.

6.1 Thresholds of Significance

Criteria Pollutants

The SJVUAPCD has established the following significance thresholds for criteria pollutants. A proposed project does not have a significant air quality impact unless emissions of criteria pollutants exceed the following thresholds (Table 6-1).

Table 6-1: Significance Thresholds Criteria Pollutants

Pollutant / Precursor	Construction Emissions Emissions (tons/year)	Operational Emissions	
		Permitted Equipment and Activities Emissions (tons/year)	Non-Permitted Equipment and Activities Emissions (tons/year)
CO	100	100	100
NOx	10	10	10
VOC	10	10	10
SOx	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Odors

The proposed project is not a source of odors.

CEQA Thresholds of Significance for GHG Emissions and Global Climate Change

There are no thresholds of significance that have been established by the SJVUAPCD for GHG emissions and global climate change. Based on the March 2010 amendments to the *Guidelines for the Implementation of the California Environmental Quality Act* (State CEQA Guidelines), the proposed project could potentially have a significant impact related to GHG and global climate change if it would:

- Generate GHGs, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emission of GHGs.

In order to determine whether or not a proposed project would cause an incremental contribution resulting in a significant effect on global climate change, the incremental contribution of the proposed project must be determined quantitatively and qualitatively by examining the types and levels of GHG emissions that would be generated directly and indirectly and address whether the proposed project would comply with the provisions of an adopted greenhouse

reduction plan or strategy. If no such plan or strategy is applicable or has been adopted, the analysis must determine if the proposed project would significantly hinder or delay California's ability to meet the reduction targets contained in Assembly Bill 32 (AB 32). The 2017 AB 32 update sets target emissions and requires that GHG emitted in California be reduced to 40% below 1990 levels by the year 2030, which is 256 million metric tons of carbon dioxide equivalent ($MMTCO_2e$).

6.2 Model Assumptions

Short-term construction emissions and long-term operational emissions were determined utilizing the latest version of the CalEEMod version 2020.4.0 model based on the assumptions summarized below.

Short-term Construction Assumptions

- Drilling of the well is expected in 2025.
- Grading is equal to the pad size of 2.10 acres. All access roads currently exist.
- Equipment listing and usage used based on construction plan.
- The number and type of construction equipment was determined by the CalEEMod defaults based on the size of the proposed project unless otherwise specified.
- Worker and vendor trips are based on two one-way trips per person per day and were based on travel from Bakersfield, CA at 50 miles each way.
    - Worker vehicles were modelled using LHD-mix factors.
    - Vendor vehicles were modelled using HDT-mix factors.
- Haul trips were based on travel from Bakersfield, CA at 50 miles each way. Haul trips include dust control water trucks. Haul trucks were modelled using HHDT factors.
- A 'Fugitive Dust Control Plan' will be submitted for mitigation. Exposed areas will be watered twice per day. Unpaved road speed is limited to 15 miles per hour.
- Paved access roads include 45 of the 50 mile trip.
- Demolition, paving, and architectural coatings are not required.

Long-term Operational Assumptions

- Operation of the proposed project would begin in 2025.
- All required air permits will be obtain from the San Joaquin Valley Air Pollution Control District prior to operating. Expected crude oil processing facility permitting includes:
    - Wash Tank
    - Stock Tank
    - Water Tank
    - Gas Separator
    - 4 mmbtu/hr Heater
- The operational traffic analysis is based on two existing workers visiting the well location daily. Worst-case incremental mileage from Bakersfield was used.
- The location will not require architectural coatings, water, sewer, consumer products, parking, waste disposal, or pesticides/fertilizers.

- The well head pump will be powered by either recovered gas supplying a permit-exempt electric generator (less than150 kW/day) or a permit-exempt well head engine.
    - Well head pump engine will use produced field gas and/or propane. The model was based on 'worst-case' usage of field gas and AP-42 '3.0 Reciprocating Engine' emission factors for a 25 bhp engine at 50% load.

6.3 Short-Term Construction Air Emissions

The implementation of the proposed project would generate short-term increases in air emissions from construction activities that would occur as a result of the proposed project. These construction activities have the potential to result in air emissions that could exceed the SJVUAPCD's thresholds of significance.

The major construction activities that would occur are the following:

- Grading – initial groundwork to set up well pad is expected to take 12 days.
- Rig Set Up – Rig and associated equipment installation is expected to take 3 days.
- Well Drilling/Completion – the well drilling and completion is expected to take 18 days.
- Rig Decommisioning – Rig decommissioning is expected to take 3 days.
- Tank Facility Construction – the construction of the tanks, heater, separator, and associated pipelines is expected to be 20 days.

The construction activities would generate emissions that primarily consist of: fugitive dust (PM10 and PM2.5) from soil disturbance; exhaust emissions (including NOx, SOx, CO, VOC, PM10, and PM2.5) from diesel construction equipment and motor vehicle operation.

The construction activities that would occur off-site could include: delivery of materials and supplies to the sites; and the transport of construction employees to and from the sites. The off-site activities would generate emissions that primary consist of VOC, NOx, PM10, PM2.5, and CO from motor vehicle exhaust. The construction emissions would vary substantially from day to day, depending on the level of activity, the specific type of operation, and the climatic conditions.

Table 6-2 provides the annual short-term construction emissions generated by the construction activities. The construction equipment used in the CalEEMod model and the CalEEMod model outputs are included in Exhibit H. As seen in Table 6-2, the annual emissions from the construction activities would not exceed the SJVUAPCD thresholds of significance in any construction year. Therefore, the short-term impacts to regional air quality as a result of the construction will be *less than significant*. Sections 8.1 and 8.2 below provide mitigation set forth in the GAMAQI guidance document and SJVUAPCD's Rules that would further reduce the construction equipment exhaust and PM10 and PM2.5 emission levels.

Table 6-2: Annual Short-term Construction Emissions - After Mitigation

Source	Pollutant (tons/year)						
	VOC	NO_x	CO	PM10	PM2.5	SO_x	CO_{2e}
2025 Highest Year	**0.11**	**2.71**	**1.98**	**13.51**	**1.44**	**0.01**	**487.85**
SJVUAPCD Threshold	10	10	100	15	15	27	NA
Is Threshold Exceeded After Mitigation?	No	No	No	No	No	No	NA

Notes: VOC/ROG = Reactive Organic Gases
CO = Carbon Monoxide
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter < 10 microns
$PM_{2.5}$ = Particulate Matter < 2.5 microns
SO_x = Sulfur Oxides
Refer to Exhibits for a printout of the computer model used in this analysis.

6.4 Long-Term Operational Air Emissions

The implementation of the proposed project would generate long-term emissions caused by mobile sources (vehicle emissions), from energy consumption (related to heating and cooling), landscape maintenance, and consumer products. The following provides a discussion of the long-term operational emissions of the proposed project.

The predicted emissions associated with vehicular traffic (mobile sources) are not subject to the SJVUAPCD's permit requirements. However, the SJVUAPCD is responsible for overseeing efforts to improve air quality within the SJVAB. The SJVUAPCD reviews land use changes to evaluate the potential impact on air quality. The SJVUAPCD has established a CEQA significance level for criteria pollutants as shown in Table 6-1.

Operational emissions have been estimated using the CalEEMod.2020.4.0 computer model. CalEEMod predicts operational emissions of CO, VOC, NO_x, SO_x, PM10, PM2.5 and CO2e associated with new or modified land uses. CalEEMod modeling results are contained in Exhibit H and summarized in Table 6-3 below.

Table 6-3: Annual Long-term Operational Emissions

Source	Pollutant (tons/year)						
	VOC	NO_x	CO	PM10	PM2.5	SO_x	CO_{2e}
2025 (highest year)	0.28	0.54	0.90	0.12	0.09	0.03	103.75
SJVUAPCD Threshold	10	10	100	15	15	27	NA
Is Threshold Exceeded After Mitigation?	No	No	No	No	No	No	NA

As seen in Table 6-3, the annual total long-term emissions from the operation of the proposed project will not exceed the SJVUAPCD thresholds of significance for VOC and NOx. The highest operational emissions occur in 2024, the first year after the development's construction has been completed. Therefore, the long-term impacts to regional air quality from operation of the proposed project will be ***less than significant.***

Mobile Source - Carbon Monoxide Local Emissions

CO emissions are a function of vehicle idling time and, thus, under normal meteorological conditions, depend on traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations close to a congested roadway or intersection may reach unhealthful levels affecting sensitive receptors (residents, school children, hospital patients, the elderly, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at an unacceptable Level of Service (LOS). CO "Hot Spot" modeling is required if a traffic study reveals that the proposed project will reduce the LOS on one or more streets to E or F; or, if the proposed project will worsen an existing LOS F.

A traffic study is required if the project either exceeds 50-trip threshold in either the AM or PM peak hours or if the VMT exceeds the significance threshold for the greater Bakersfield area. The 50-trip threshold and the VMT significance threshold were not exceeded. Therefore, the project is not anticipated to result in a significant impact under CEQA and the long-term impacts to local air quality due to CO concentrations will be ***less than significant***.

6.5 Potential Effect on Sensitive Receptors

The air quality impact of the proposed project is not likely to affect sensitive receptors. Sensitive receptors are areas where young children, chronically ill individuals, or other individuals more sensitive than the general population are located. Examples of sensitive receptors are schools, day care centers, and hospitals. Some residents in nearby residential areas may also be considered sensitive.

The majority of the potential ambient air quality emissions from this proposed project are related to increases in traffic. As discussed above, the proposed project is not expected to result in localized impacts such as CO "Hot Spots" and, therefore, is not expected to impact nearby sensitive receptors. Therefore, the potential impacts to sensitive receptors will **be *less than significant*.**

6.6 Odors

The generation of odors may be associated with certain types of small industrial sources, which are regulated by the SJVUAPCD. The incidence of odors from this facility is expected to be **less than significant.**

6.7 Hazardous Air Pollutants

The proposed project is not a significant source of hazardous air pollutants (HAPS). This facility has the potential to emit HAPs from the operation of stationary source equipment and diesel vehicles. The Health Risk Analysis (Exhibit J) uses the SJVAPCD Prioritization Calculator to determine the total risk from the construction and the operation of the well and associated facility.

The total cancer risk, as determined by the Prioritization Calculator, was 0.70. The SJVUAPCD has established rules that limit the emissions of HAPs from stationary sources such that the excess cancer risk to the nearest receptor is less than 10 in one million, and the non-carcinogenic Hazard Index is less than 1, therefore the risk to the nearest receptor is expected to be ***less than significant*.**

6.8 Greenhouse Gas Emissions

In order to determine whether or not a proposed project would cause an incremental contribution resulting in a significant effect on global climate change, the incremental contribution of the proposed project must be determined quantitatively and qualitatively by examining the types and levels of GHG emissions that would be generated directly and indirectly and addressing whether the proposed project would comply with the provisions of an adopted greenhouse reduction plan or strategy. If no such plan or strategy is applicable or has been adopted, the analysis must determine if the proposed project would significantly hinder or delay California's ability to meet the reduction targets contained in AB 32. As discussed above, AB 32 sets target emissions and requires that GHG emitted in California be reduced to 1990 levels by the year 2020, which is 427 million metric tons of carbon dioxide equivalent emissions ($MMTCO_2e$).[2] The year 2020 reduction target equates to a decrease of approximately 29 percent in GHG emissions below year 2020 "business as usual" (BAU) emissions (or approximately 15 percent below the current GHG emissions).

"Business as usual" (BAU) conditions are defined based on the year 2005 building energy efficiency, average vehicle emissions, and electricity energy conditions. The BAU conditions assume no improvements in energy efficiency, fuel efficiency, or renewable energy generation beyond that existing today. Specifically, BAU conditions do not include future General Plan goals, policies, or implementation measures that address GHG emissions, GHG reduction

[2] GHG emissions other than CO_2 are commonly converted into CO_2 equivalents that take into account the differing GWP of different gases.

strategies included in the 2006 CAT assessment Report, CARB's expanded list of Early Action Measures to Reduce GHG Emissions in California, or mitigation provided by the California Attorney General's Office.

Short-Term Construction GHG Emissions

The implementation of the proposed project would generate short-term increases in air emissions from construction activities that would occur as a result of the proposed development. These construction activities have the potential to generate GHG Emissions of CO_2, CH_4, and N_2O primarily from vehicle and construction equipment. The other GHG emissions defined under AB 32, which include HFCs, PFCs, and SF_6, would only consist of trace emissions, if any, during construction associated with the proposed project.

The major construction activities that would occur are the following:

- Site preparation and grading
- Well drilling and completion

The construction activities would generate dust emissions primarily from soil disturbance; exhaust emissions from construction equipment and motor vehicle operation.

The construction activities that would occur off-site could include delivery of building materials and supplies to the sites and the transport of construction employees to and from the sites. The construction emissions would vary substantially from day to day, depending on the level of activity, the specific type of operation, and the climatic conditions.

It is anticipated that future construction activities associated with the proposed project would have the potential to result in short-term increases in air emissions during construction activities that would generate GHG emissions that could contribute to global climate change.

The CalEEMod model was used to estimate the GHG emissions due to construction activities as a result of the proposed project with "business as usual" conditions. The CalEEMod outputs are included in Exhibit H for reference and summarized in Table 6-2 above. The construction activities for the proposed project would generate a maximum of 488 metric tons per year of CO_2e of GHG emissions. This represents 0.00011 percent of the 2016 GHG emissions in the State of California (which is 429,400,000 metric tons of CO_2e). Therefore, the GHG emissions as a result of the proposed project will be ***less than significant.***

Long-Term Operational GHG Emissions

It is anticipated that the operation of the proposed project would have the potential to result in long-term increases in air emissions that would generate GHGs that could contribute to global climate change. The majority of the long-term GHG emissions would be generated by motor vehicles traveling to and from the project site. The daily operational activities as a result of the proposed project would have the potential to generate GHG emissions of CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. Since there is an international ban on CFCs, it is not anticipated that this GHG would occur. SF_6 is primarily used in electronics manufacturing and as an insulation medium in large electrical transformers. It is not anticipated that there will be SF_6 emissions from the proposed project.

The CalEEMod model was used to estimate the GHG emissions due to mobile source emissions and area source emissions as a result of the proposed project with "business as usual" conditions. The outputs are included in Exhibit H and summarized in Table 6-3 above. The operation of the proposed project based on "business as usual" conditions" would result in 104

metric tons per year of CO_2e of GHG emissions. This represents 0.000024 percent of the CO_2e of 2016 GHG emissions in the State of California (which is 429,400,000 metric tons of CO_2e).[3] Therefore, the GHG emissions as a result of the proposed project will be ***less than significant.***

Mitigation from the California Attorney General's Office

The Office of the California Attorney General maintains a list of "CEQA Mitigations for Global Warming Impacts" on their website. This list, which is not intended to be exhaustive, includes examples of types of mitigation measures and policies that local agencies may consider offsetting or reducing impacts related to global climate change. The Attorney General's Office acknowledges that the measures cited may not be appropriate for every project and that the lead agency undertaking a CEQA analysis should use its own informed judgment in deciding which measures it would analyze and which measure it would require for a given project. These include measures that are "Generally Applicable" in the areas of energy efficiency, renewable energy, water conservation and efficiency, solid waste measures, land use measures, transportation and motor vehicles, and carbon offsets.

The proposed project would incorporate the applicable measures and policies provided by the Attorney General's Office. This includes energy efficiency, water conservation and efficiency, solid waste recycling, and access to transit. Therefore, the proposed project would comply with the applicable mitigation provided by the Attorney General's Office and impacts are considered to be ***less than significant***.

7.0 CUMULATIVE IMPACTS

The GAMAQI, under CEQA, defines cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The document also states that *"if a project is significant based on the thresholds of significance for criteria pollutants, then it is also cumulatively significant. If the combined impacts of such projects cause or worsen an exceedance of the concentration standards, the project would have a cumulatively significant impact under CEQA."*

Regionally, the SJUAPCD has annual VOC emissions of 302,200 tons and annual NO_x emissions of 223,800 tons from all sources. The proposed project represents approximately 0.00009% of the VOC and 0.0002% of the NO_x emissions in the SJVUAPCD. These amounts are not individually considerable because emissions within the SJVUAPCD Air Basin will be essentially the same regardless of whether or not the proposed project is built.

As stated in page 22 of the SJVUAPCD CEQA Guidelines, "a project's potential contribution to cumulative impacts shall be assessed utilizing the same significance criteria as those for project specific impacts." Since the proposed project would not have a significant long-term air quality impact, the proposed project would not have a significant cumulative impact to regional air quality. Therefore, the cumulative impacts to the regional air quality with implementation of the proposed project would be ***less than significant***.

Hazardous Air Pollutants (HAPs)

The GAMAQI also states that when evaluating potential impacts related to HAPs, *"impacts of local pollutants (CO, HAPs) are cumulatively significant when modeling shows that the combined emissions from the project and other existing and planned projects will exceed air quality standards."*

[3] California Air Resources Board, 2016 GHG Inventory, *California Greenhouse Gas Inventory (millions of metric tonnes of CO2 equivalent) — By IPCC Category,* Updated July 11, 2018

The proposed project does not have significant sources of HAPs, as discussed in section 6.7. Therefore, the cumulative impact as a result of HAPs would be ***less than significant***.

Carbon Monoxide (CO) from Mobile Sources

Based on the CO Protocol Analysis developed by the California Department of Transportation (CalTrans), and due to the fact that increased CO concentrations are usually associated with roadways that are congested and with heavy traffic volume, the District has established that preliminary screening can be used to determine with fair certainty that the effect a project has on any given intersection would not result in a CO hotspot with proposed mitigation. Therefore, the District has established that if neither of the following criteria are met at all intersections affected by the developmental project, the project will result in no potential to create a violation of the CO standard:

A. A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or

B. A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at more or more intersections in the project vicinity.

If either of the above criteria can be associated with any intersection affected by the project, the applicant/consultant would need to conduct a CO analysis to determine a project's significance or provide mitigation to maintain LOS C or above.

As noted in section 6.4, the proposed project will not have a significant impact on the LOS at any intersection or road segment. **Therefore, the cumulative impact as a result of CO emissions is *less than significant***.

8.0 EMISSION REDUCTION MEASURES

The proposed project generates air pollutant emissions associated with the construction and operation of the proposed project. Based on the analysis provided above, the potential impacts of the proposed project would be less than significant. However, to further reduce the emissions associated with the construction of the proposed project, the project will implement the following reduction measures.

8.1 Reduction Measures for Construction Equipment Exhaust

The construction activities for the proposed project shall incorporate the following measures stated in the GAMAQI guidance document as approved mitigation to reduce exhaust emissions from construction equipment:

- Properly and routinely maintain all construction equipment, as recommended by manufacturer manuals, to control exhaust emissions.
- Shut down equipment when not in use for extended periods of time to reduce emissions associated with idling engines.
- Encourage ride sharing and use of transit transportation for construction employee commuting to the project sites.
- Use electric equipment for construction whenever possible in lieu of fossil fuel-fired equipment.

8.2 Reduction Measures for Fugitive Dust Emissions

The construction activities for the proposed project shall incorporate the following measures set forth by the SJVUAPCD Fugitive Dust rules to reduce fugitive dust emissions during grading and construction:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover, or vegetative ground cover.
- All onsite unpaved roads and offsite-unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported offsite, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

9.0 REFERENCES

California Air Resources Board (CARB), website for background information, http://www.arb.ca.gov/

California Department of Transportation (Caltrans), *Transportation Project-Level Carbon Monoxide Protocol,* December 1997.

Caltrans, *Caltrans Interim Guidance: Project-Level PM_{10} Hot-Spot Analysis,* February 2000.

County of Kern, Planning Department, *County of Kern Housing Element 2002-2007*, Adopted September 10, 2002.

Kern Council of Governments (KernCOG), *Final Conformity Analysis for the 2006 Federal Transportation Improvement Program (TIP) and 2004 Regional Transportation Plan (RTP),* July 20, 2006

KernCOG, *2000 Regional Housing Allocation Plan*, Adopted May 17, 2001

San Joaquin Valley Unified APCD, *Guidelines for Implementation of the California Environmental Quality Act (CEQA) of 1970*, as amended, July 1, 1999

SJVUAPCD, *Guide for Assessing and Mitigating Air Quality Impacts,* March 19, 2015.

EXHIBIT A

AREA LOCATION MAP

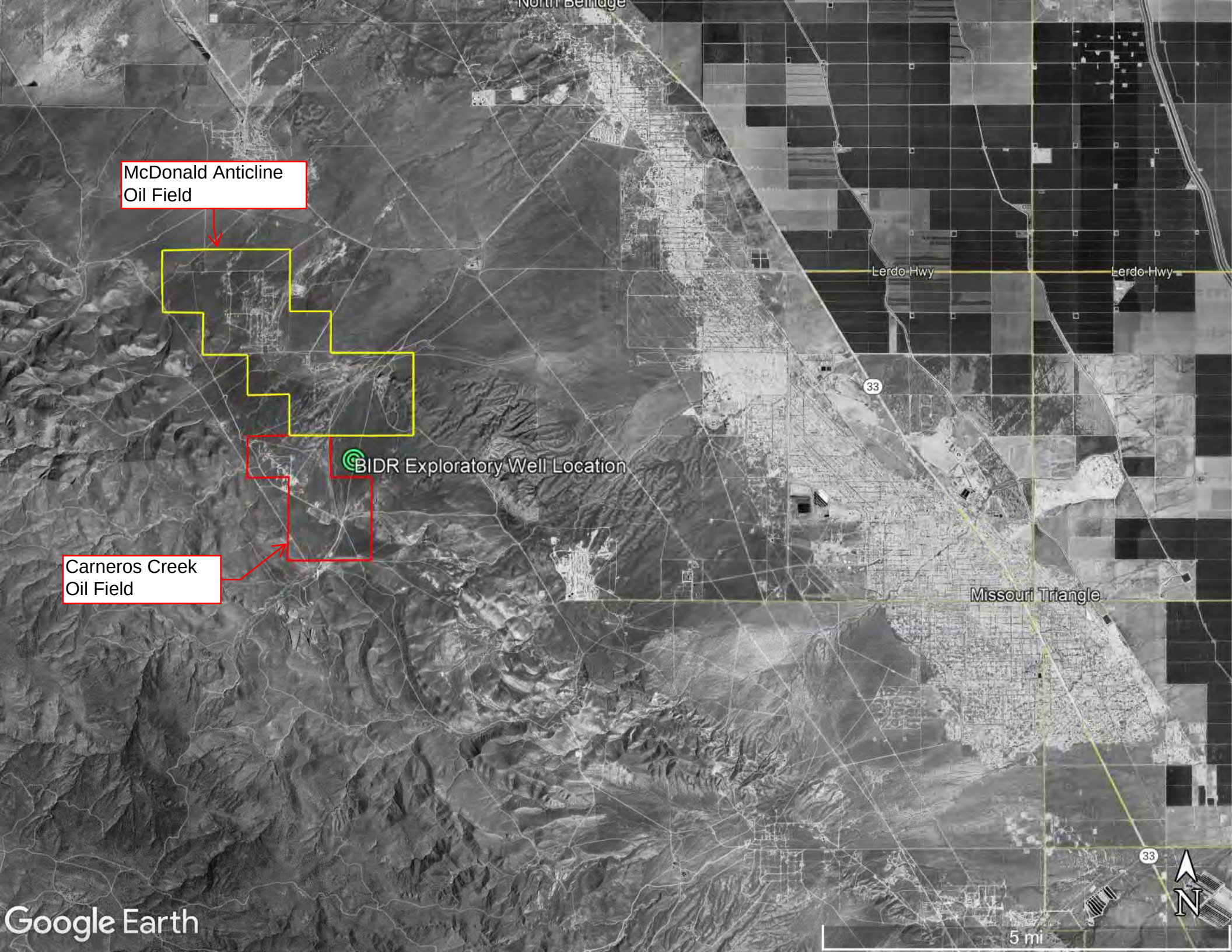

McDonald Anticline
Oil Field
Carneros Creek
Oil Field
BIDR Exploratory Well Location
Lerdo Hwy
Lerdo Hwy
33
Missouri Triangle
33
N
5 mi
Google Earth

EXHIBIT B

PROJECT LOCATION MAP

BIDR Oil, LLC

BIDR Kern County Exploratory Well Project
Location Map



EXHIBIT C

PROJECT SITE PLAN

BIDR Oil, LLC

BIDR Kern County Exploratory Well Project
Site Map

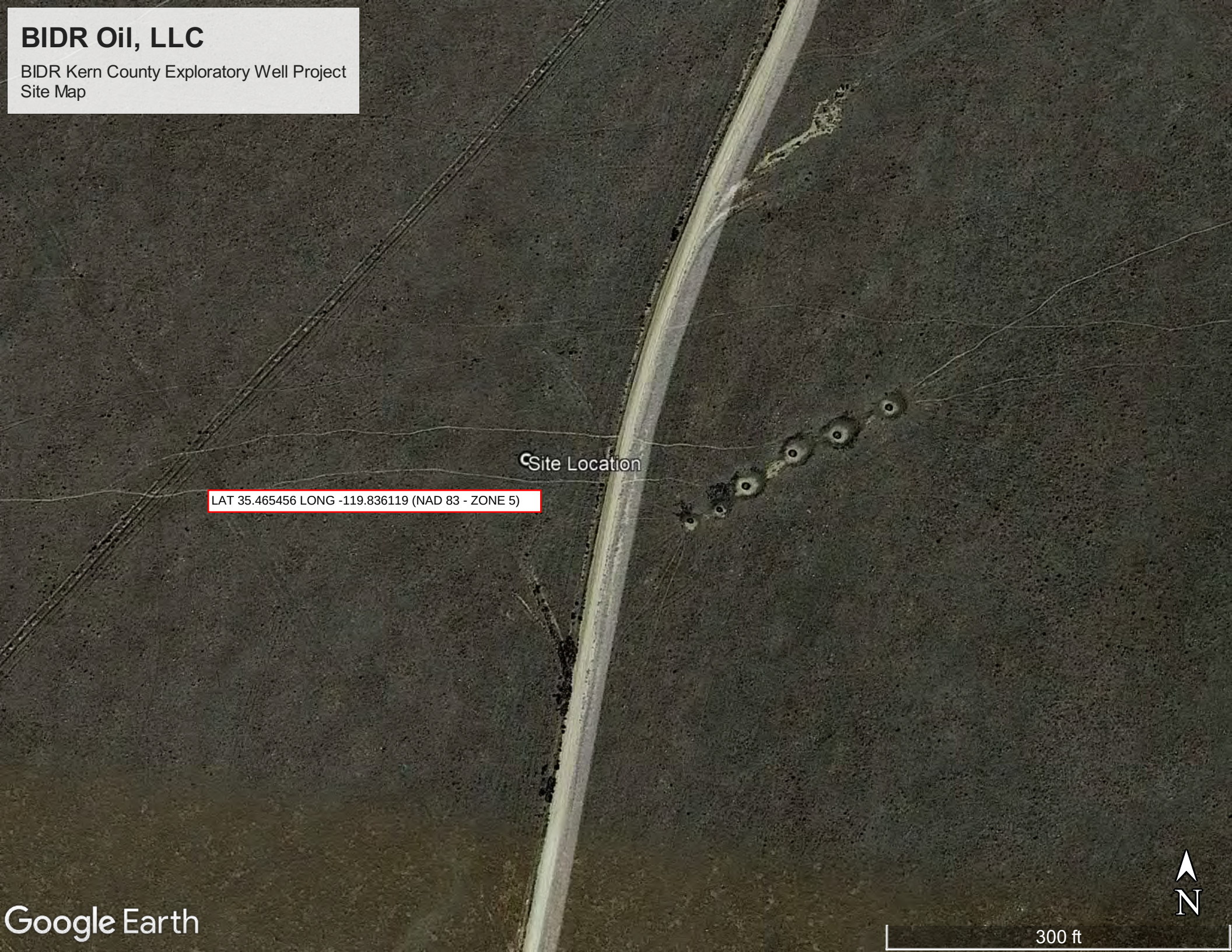


EXHIBIT D

ASSESSOR’S PARCEL MAP

BIDR Oil, LLC

BIDR Kern County Exploratory Well Project
APN Map

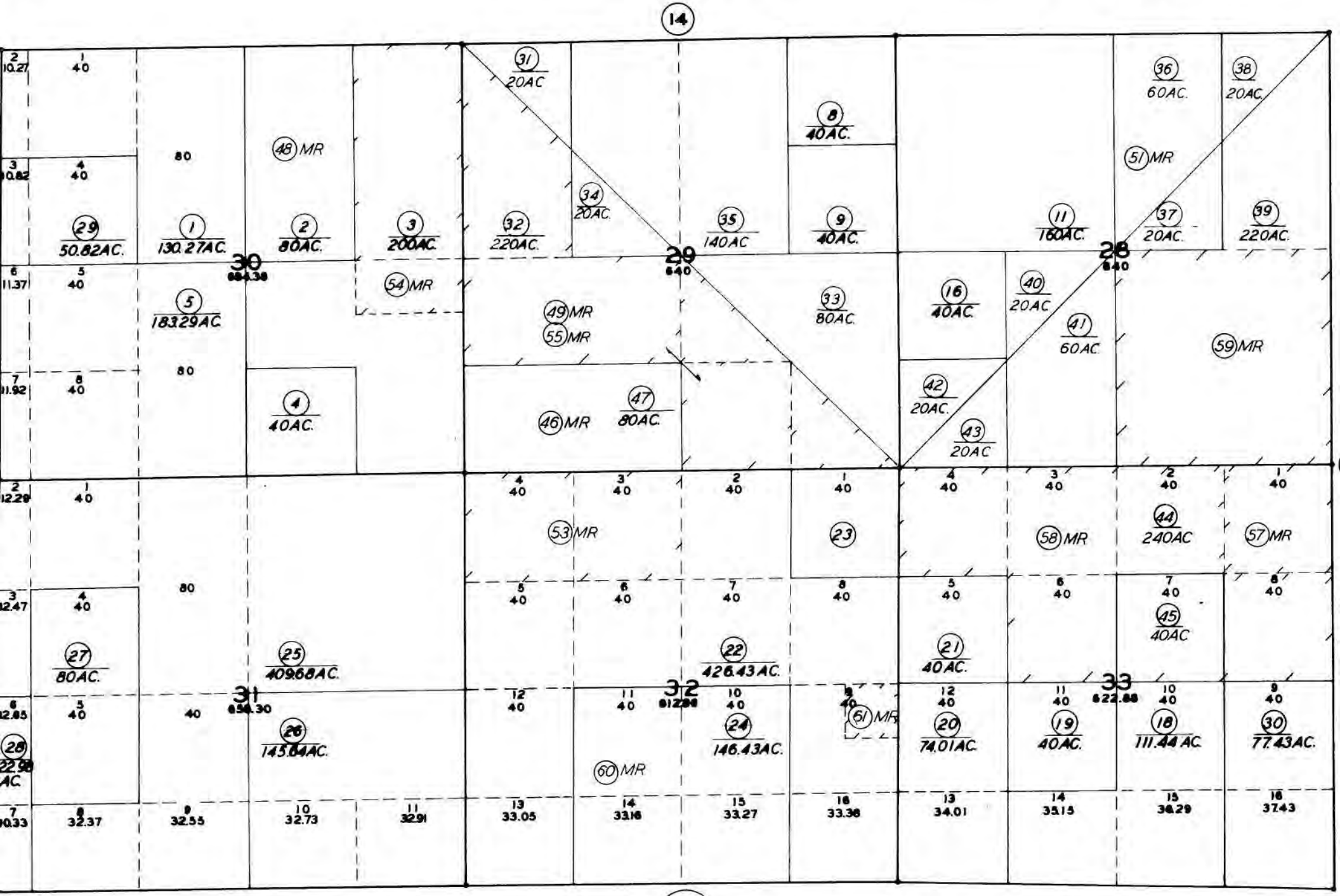


-17

T. 28 S. R. 20 E.

SCHOOL DIST. 101-1 101-3

8



Revised: May 26 2009

BK. 98

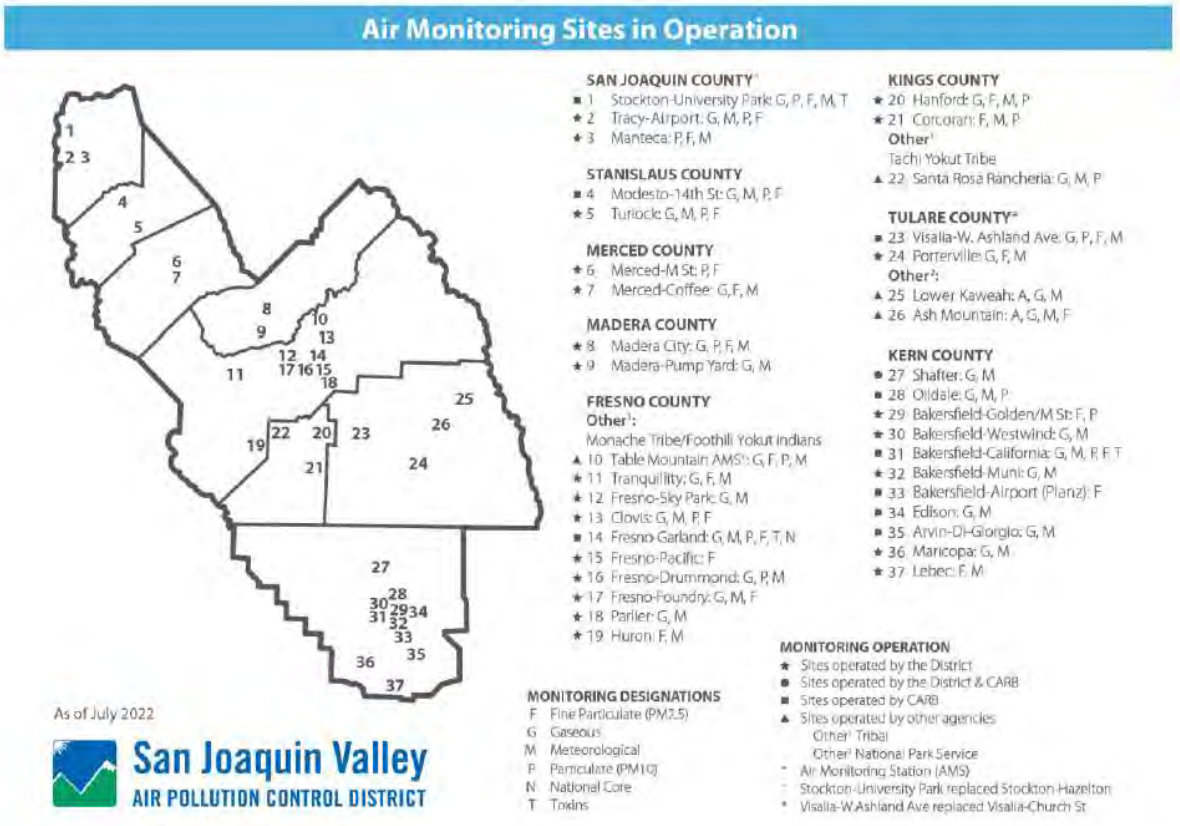
Note: This map is for assessment purposes only. It is not to be construed as portraying legal ownership or divisions of land for purposes of zoning or subdivision law.

ASSESSORS MAP NO. 85

COUNTY OF KERN

EXHIBIT E

AIR BASIN MONITORING STATIONS



Source: http://www.valleyair.org/aqinfo/MonitoringSites.htm, 07/2022

EXHIBIT F

TOPOGRAPHIC MAP

BIDR Oil, LLC

BIDR Kern County Exploratory Well Project
Topographic Map

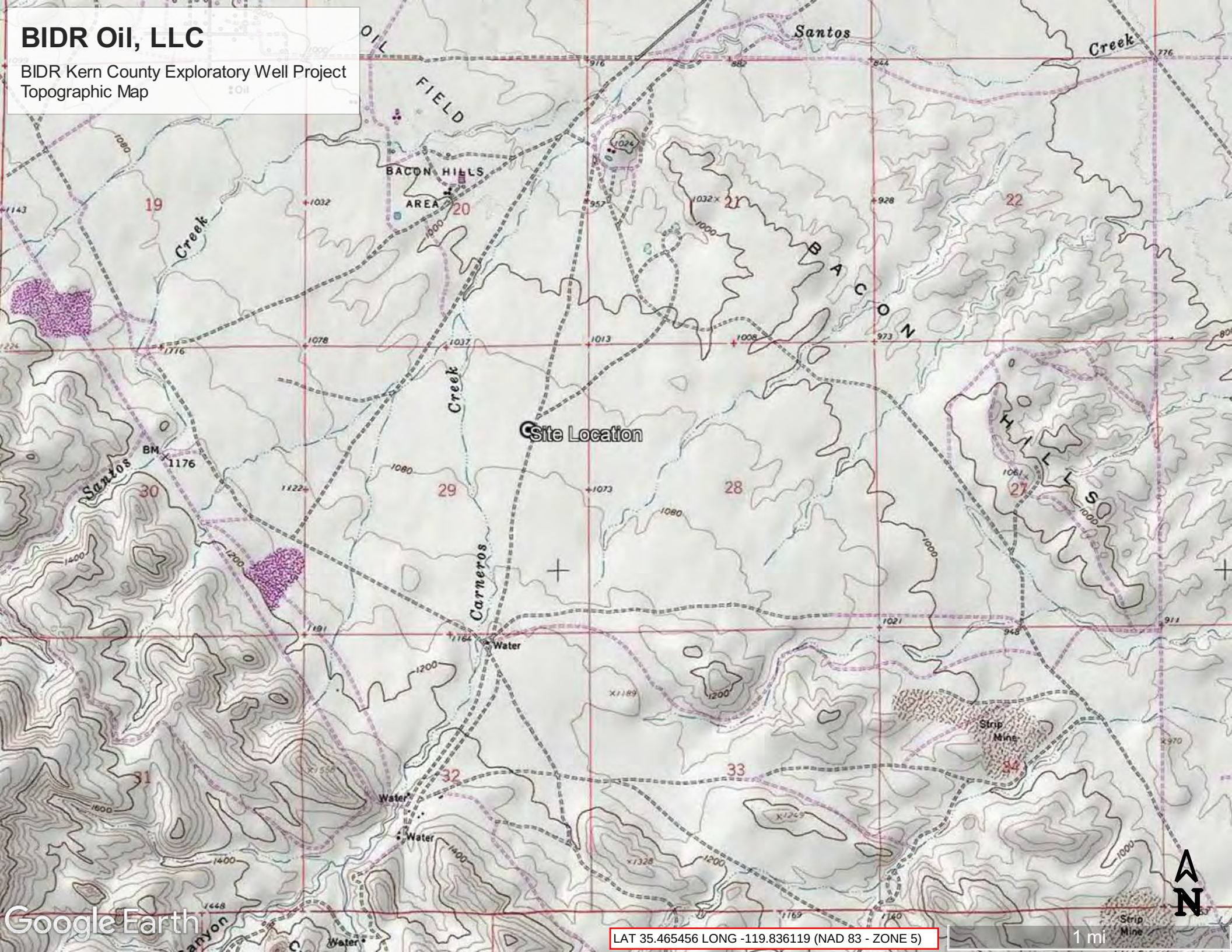


EXHIBIT G

AIR MONITORING STATION DATA

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

iADAM

at Shafter-Walker Street

	2020		2021		2022	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Dec 2	40.9	Dec 1	47.8	Jan 27	34.9
Second High:	Oct 30	39.7	Nov 30	46.0	Oct 5	32.9
Third High:	Nov 16	35.3	Dec 2	37.5	Nov 22	32.5
Fourth High:	Nov 28	34.2	Sep 30	36.7	Feb 11	32.0
California:						
First High:	Dec 2	40	Dec 1	47	Jan 27	34
Second High:	Oct 30	39	Nov 30	46	Feb 11	32
Third High:	Nov 16	35	Dec 2	37	Oct 5	32
Fourth High:	Nov 2	34	Sep 30	36	Nov 22	32
National:						
1-Hour Standard Design Value:		36		34		32
1-Hour Standard 98th Percentile:		32.5		32.9		30.1
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		9		8		8
California:						
1-Hour Std Designation Value:		40		40		40
Expected Peak Day Concentration:		44		42		37
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		9		8		8
Annual Average:		8		8		7
Year Coverage:		99		87		98

◄ Shift Backward 1 year 2 years 3 years Shift Forward ►

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Shafter-Walker Street between 1989 and 2022. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

iADAM
at Oildale-3311 Manor Street

	2020		2021		2022	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Sep 8	517.2	Oct 11	421.4	May 20	149.4
Second High:	Nov 6	277.8	Oct 4	164.3	Oct 5	118.8
Third High:	Aug 22	230.4	Oct 25	150.2	Sep 28	115.8
Fourth High:	Sep 14	225.3	Oct 1	137.6	Oct 6	113.4
California:						
First High:	Nov 6	277.3	Oct 11	423.0	May 20	146.3
Second High:	Aug 22	221.0	Oct 4	161.1	Oct 5	115.8
Third High:	Sep 15	219.6	Oct 25	149.3	Sep 28	112.3
Fourth High:	Sep 14	219.3	Oct 1	135.2	Oct 19	110.9
National:						
Estimated # Days > 24-Hr Std:		17.4		2.2		0.0
Measured # Days > 24-Hr Std:		15		2		0
3-Yr Avg Est # Days > 24-Hr Std:		10.0		9.0		6.0
Annual Average:		*57.3*		*50.0*		*44.9*
3-Year Average:		*53*		*51*		*51*
California:						
Estimated # Days > 24-Hr Std:		*		135.6		128.8
Measured # Days > 24-Hr Std:		123		129		127
Annual Average:		*		49.4		45.0
3-Year Maximum Annual Average:		*		49		49
Year Coverage:		0		0		0

◄ Shift Backward 1 year 2 years 3 years Shift Forward ►

Notes:

Daily PM10 averages and related statistics are available at Oildale-3311 Manor Street between 1988 and 2022. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in or *italics*.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

An exceedance of a standard is not necessarily related to a violation of the standard.

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.

State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

iADAM

at Bakersfield-Golden State Highway

	2020		2021		2022	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Aug 22	150.2	Oct 4	78.5	Dec 17	58.6
Second High:	Sep 15	81.5	Dec 4	63.3	Dec 16	54.7
Third High:	Oct 3	76.9	Nov 19	59.1	Dec 21	54.0
Fourth High:	Aug 19	50.2	Nov 20	59.1	Jan 14	53.9
California:						
First High:	Aug 22	150.2	Oct 4	78.5	Dec 17	58.6
Second High:	Sep 15	81.5	Dec 4	63.3	Dec 16	54.7
Third High:	Oct 3	76.9	Nov 19	59.1	Dec 21	54.0
Fourth High:	Aug 19	50.2	Nov 20	59.1	Jan 14	53.9

National:			
'06 Estimated # Days > 24-Hr Std:	33.9	45.6	35.9
'06 Measured # Days > 24-Hr Std:	10	43	33
2006 24-Hr Std Design Value:	61	59	61
2006 24-Hr Std 98th Percentile:	76.9	54.3	51.8
2006 Annual Std Design Value:	16.6	16.6	18.0
2012 Annual Std Design Value:	16.6	16.6	18.0
'06 Annual Average:	19.4	17.8	16.6
California:			
Annual Std Designation Value:	18	*	*
Annual Average:	*	*	*
Year Coverage:	91	91	92

◄ Shift Backward 1 year 2 years 3 years Shift Forward ►

Notes:

Daily PM2.5 averages and related statistics are available at Bakersfield-Golden State Highway between 1999 and 2022. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

yellow exceeds a California ambient air quality standard. orange exceeds a national ambient air quality standard.

An exceedance of a standard is not necessarily related to a violation of the standard.

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

EXHIBIT H

CALEEMOD EMISSION MODELING
- CONSTRUCTION EMISSIONS (2025)
- OPERATIONAL EMISSIONS (2025)

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

BIDR - South of McDonald Anticline

San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	91.48	1000sqft	2.10	91,480.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Section 29 of T28S/R20E

Land Use - Acreage based on pad size of 2.10 acres

Construction Phase - Demolition not required. Site prep and grading combined. No paving or architectural coating.

Off-road Equipment - per equipment schedule

Off-road Equipment - Equipment Per Equipment List

Off-road Equipment - Equipment per Equipment List

Off-road Equipment - Per equipment listing

Off-road Equipment - Equipment per Equipment List

Off-road Equipment - Equipment Per Equipment List

Trips and VMT - Distance from Bakersfield 50 miles. Water trips of 4 one-way trips added per day to haul.

On-road Fugitive Dust - 45 of 50 miles paved

BIDR - South of McDonald Anticline - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading - Grading equals pad size of 2.1 acre site

Vehicle Trips - average of six trips per day for operator and tanker truck (6/91.480sqft) and conservative distance of 50 miles

Consumer Products - No consumer product use at oil well/tank battery

Area Coating - painting not required

Energy Use - Any lease electric will be provided via generator, if needed.

Water And Wastewater - Water not required for lease.

Solid Waste - Landfill waste not generated

Construction Off-road Equipment Mitigation - Diesel equipment will use the highest Tier available with a minimum Tier 2. Water truck for dust control.

Area Mitigation -

Fleet Mix - Operator/vendor truck LDH1 95% and tanker truck HHD 5%

Stationary Sources - User Defined - Production facility with VRU going to 4.00 mmbtu/hr heater - supporting calculations are attached to end of report. Well will be powered by 25 HP NG engine or electric generator - emissions based on worst case of 25 HP NG engine (0.0636 mmbtu/hr @ 50% load).

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	45740	0
tblAreaCoating	Area_Nonresidential_Interior	137220	0
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	6.00	12.00
tblConstructionPhase	NumDays	220.00	3.00
tblConstructionPhase	NumDays	220.00	18.00
tblConstructionPhase	NumDays	220.00	3.00
tblConstructionPhase	NumDays	220.00	20.00
tblConstructionPhase	PhaseEndDate	1/8/2025	1/16/2025
tblConstructionPhase	PhaseEndDate	11/12/2025	1/21/2025
tblConstructionPhase	PhaseEndDate	9/16/2026	2/14/2025
tblConstructionPhase	PhaseEndDate	7/21/2027	2/19/2025
tblConstructionPhase	PhaseEndDate	5/24/2028	3/19/2025
tblConstructionPhase	PhaseStartDate	1/9/2025	1/17/2025
tblConstructionPhase	PhaseStartDate	11/13/2025	1/22/2025
tblConstructionPhase	PhaseStartDate	9/17/2026	2/15/2025
tblConstructionPhase	PhaseStartDate	7/22/2027	2/20/2025
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	1.75	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblEnergyUse	T24NG	16.86	0.00
tblFleetMix	HHD	0.03	0.05
tblFleetMix	LDA	0.52	0.00
tblFleetMix	LDT1	0.05	0.00
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.03	0.95
tblFleetMix	LHD2	7.4230e-003	0.00
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.16	0.00
tblFleetMix	MH	3.3950e-003	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	6.4900e-004	0.00
tblFleetMix	SBUS	1.4390e-003	0.00
tblFleetMix	UBUS	3.1300e-004	0.00
tblGrading	AcresOfGrading	12.45	2.10
tblOffRoadEquipment	HorsePower	221.00	185.00
tblOffRoadEquipment	HorsePower	187.00	224.00
tblOffRoadEquipment	HorsePower	247.00	150.00
tblOffRoadEquipment	HorsePower	97.00	164.00
tblOffRoadEquipment	HorsePower	97.00	248.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	221.00	650.00
tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	HorsePower	84.00	400.00
tblOffRoadEquipment	HorsePower	84.00	127.00
tblOffRoadEquipment	HorsePower	84.00	60.00
tblOffRoadEquipment	HorsePower	172.00	15.00
tblOffRoadEquipment	HorsePower	172.00	30.00
tblOffRoadEquipment	HorsePower	84.00	1,000.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	HorsePower	89.00	150.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	8.00	8.30
tblOffRoadEquipment	UsageHours	8.00	8.30
tblOffRoadEquipment	UsageHours	7.00	8.30
tblOffRoadEquipment	UsageHours	7.00	8.30
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblOffRoadEquipment	UsageHours	6.00	24.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOnRoadDust	HaulingPercentPave	100.00	90.00
tblOnRoadDust	HaulingPercentPave	100.00	90.00
tblOnRoadDust	HaulingPercentPave	100.00	90.00
tblOnRoadDust	HaulingPercentPave	100.00	90.00
tblOnRoadDust	HaulingPercentPave	100.00	90.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOnRoadDust	WorkerPercentPave	100.00	90.00
tblOnRoadDust	WorkerPercentPave	100.00	90.00
tblOnRoadDust	WorkerPercentPave	100.00	90.00
tblOnRoadDust	WorkerPercentPave	100.00	90.00
tblOnRoadDust	WorkerPercentPave	100.00	90.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	113.44	0.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	16.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	36.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblTripsAndVMT	HaulingTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripNumber	0.00	36.00
tblTripsAndVMT	VendorTripNumber	15.00	24.00
tblTripsAndVMT	VendorTripNumber	15.00	36.00
tblTripsAndVMT	VendorTripNumber	15.00	24.00
tblTripsAndVMT	VendorTripNumber	15.00	36.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripNumber	15.00	36.00
tblTripsAndVMT	WorkerTripNumber	38.00	20.00
tblTripsAndVMT	WorkerTripNumber	38.00	44.00
tblTripsAndVMT	WorkerTripNumber	38.00	20.00
tblTripsAndVMT	WorkerTripNumber	38.00	36.00
tblVehicleTrips	CC_TL	6.60	50.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CNW_TL	6.60	50.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CW_TL	14.70	50.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	6.42	0.07
tblVehicleTrips	SU_TR	5.09	0.07
tblVehicleTrips	WD_TR	3.93	0.07
tblWater	IndoorWaterUseRate	21,154,750.00	0.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.1376	1.1646	1.3239	5.1500e-003	13.4579	0.0366	13.4945	1.3740	0.0353	1.4092	0.0000	481.0645	481.0645	0.0434	0.0191	487.8491
Maximum	**0.1376**	**1.1646**	**1.3239**	**5.1500e-003**	**13.4579**	**0.0366**	**13.4945**	**1.3740**	**0.0353**	**1.4092**	**0.0000**	**481.0645**	**481.0645**	**0.0434**	**0.0191**	**487.8491**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.1117	2.7069	1.9787	5.1500e-003	13.4367	0.0767	13.5134	1.3626	0.0764	1.4390	0.0000	481.0641	481.0641	0.0434	0.0191	487.8487
Maximum	**0.1117**	**2.7069**	**1.9787**	**5.1500e-003**	**13.4367**	**0.0767**	**13.5134**	**1.3626**	**0.0764**	**1.4390**	**0.0000**	**481.0641**	**481.0641**	**0.0434**	**0.0191**	**487.8487**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**18.81**	**-132.42**	**-49.46**	**0.00**	**0.16**	**-109.54**	**-0.14**	**0.83**	**-116.76**	**-2.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2025	3-31-2025	1.2675	2.7172
		Highest	1.2675	2.7172

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0000e-005	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6300e-003	1.6300e-003	0.0000	0.0000	1.7400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0153	0.1696	0.1116	9.7000e-004	0.0485	2.1700e-003	0.0507	0.0137	2.0700e-003	0.0158	0.0000	90.6479	90.6479	1.0600e-003	7.0800e-003	92.7841
Stationary	0.2647	0.3667	0.7852	0.0251		0.0718	0.0718		0.0718	0.0718	0.0000	0.4281	0.4281	0.4214	0.0000	10.9628
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2801**	**0.5363**	**0.8976**	**0.0261**	**0.0485**	**0.0740**	**0.1225**	**0.0137**	**0.0739**	**0.0876**	**0.0000**	**91.0777**	**91.0777**	**0.4225**	**7.0800e-003**	**103.7486**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0000e-005	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6300e-003	1.6300e-003	0.0000	0.0000	1.7400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0153	0.1696	0.1116	9.7000e-004	0.0485	2.1700e-003	0.0507	0.0137	2.0700e-003	0.0158	0.0000	90.6479	90.6479	1.0600e-003	7.0800e-003	92.7841
Stationary	0.2647	0.3667	0.7852	0.0251		0.0718	0.0718		0.0718	0.0718	0.0000	0.4281	0.4281	0.4214	0.0000	10.9628
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2801**	**0.5363**	**0.8976**	**0.0261**	**0.0485**	**0.0740**	**0.1225**	**0.0137**	**0.0739**	**0.0876**	**0.0000**	**91.0777**	**91.0777**	**0.4225**	**7.0800e-003**	**103.7486**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2025	1/16/2025	5	12	
2	Rig Setup	Building Construction	1/17/2025	1/21/2025	5	3	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3	Drilling Phase	Building Construction	1/22/2025	2/14/2025	5	18	
4	Rig Decommission	Building Construction	2/15/2025	2/19/2025	5	3	
5	Facility Construction	Building Construction	2/20/2025	3/19/2025	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2.1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Bore/Drill Rigs	1	1.70	185	0.50
Grading	Graders	1	8.30	224	0.41
Grading	Pumps	1	3.30	84	0.74
Grading	Rubber Tired Dozers	1	8.30	150	0.40
Grading	Tractors/Loaders/Backhoes	1	8.30	164	0.37
Grading	Tractors/Loaders/Backhoes	1	8.30	248	0.37
Rig Setup	Cranes	1	10.00	231	0.29
Rig Setup	Forklifts	1	10.00	150	0.20
Rig Setup	Welders	1	10.00	46	0.45
Drilling Phase	Bore/Drill Rigs	1	24.00	650	0.50
Drilling Phase	Forklifts	1	8.00	150	0.20
Drilling Phase	Generator Sets	2	24.00	400	0.74
Drilling Phase	Generator Sets	1	24.00	127	0.74
Drilling Phase	Generator Sets	3	24.00	60	0.74
Drilling Phase	Other Construction Equipment	3	12.00	15	0.42
Drilling Phase	Other Construction Equipment	3	12.00	30	0.42
Drilling Phase	Pumps	2	24.00	1000	0.74

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Drilling Phase	Tractors/Loaders/Backhoes	1	24.00	97	0.37
Drilling Phase	Welders	2	24.00	46	0.45
Rig Decommission	Cranes	1	10.00	231	0.29
Rig Decommission	Forklifts	1	10.00	150	0.20
Rig Decommission	Welders	2	10.00	46	0.45
Facility Construction	Cranes	1	4.00	231	0.29
Facility Construction	Forklifts	2	6.00	89	0.20
Facility Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Facility Construction	Welders	2	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	6	36.00	36.00	16.00	50.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Rig Setup	3	20.00	24.00	30.00	50.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Drilling Phase	19	44.00	36.00	36.00	50.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Rig Decommission	4	20.00	24.00	30.00	50.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Facility Construction	7	36.00	36.00	16.00	50.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0386	0.0000	0.0386	0.0207	0.0000	0.0207	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9200e-003	0.0819	0.0791	1.9000e-004		3.5300e-003	3.5300e-003		3.2700e-003	3.2700e-003	0.0000	16.5886	16.5886	4.9700e-003	0.0000	16.7129
Total	**8.9200e-003**	**0.0819**	**0.0791**	**1.9000e-004**	**0.0386**	**3.5300e-003**	**0.0421**	**0.0207**	**3.2700e-003**	**0.0240**	**0.0000**	**16.5886**	**16.5886**	**4.9700e-003**	**0.0000**	**16.7129**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	2.2300e-003	3.3000e-004	1.0000e-005	0.0519	2.0000e-005	0.0520	5.2400e-003	2.0000e-005	5.2600e-003	0.0000	1.0502	1.0502	0.0000	1.7000e-004	1.0995
Vendor	7.5000e-004	0.0499	7.1500e-003	2.7000e-004	1.4025	4.2000e-004	1.4030	0.1417	4.0000e-004	0.1421	0.0000	25.7292	25.7292	7.0000e-005	3.8300e-003	26.8715
Worker	1.7600e-003	1.2900e-003	0.0173	6.0000e-005	1.4008	3.0000e-005	1.4008	0.1410	3.0000e-005	0.1410	0.0000	5.8455	5.8455	8.0000e-005	1.2000e-004	5.8835
Total	**2.5400e-003**	**0.0534**	**0.0248**	**3.4000e-004**	**2.8552**	**4.7000e-004**	**2.8557**	**0.2879**	**4.5000e-004**	**0.2884**	**0.0000**	**32.6249**	**32.6249**	**1.5000e-004**	**4.1200e-003**	**33.8546**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0174	0.0000	0.0174	9.3300e-003	0.0000	9.3300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-003	0.1517	0.1153	1.9000e-004		4.1100e-003	4.1100e-003		4.1100e-003	4.1100e-003	0.0000	16.5886	16.5886	4.9700e-003	0.0000	16.7129
Total	**5.5000e-003**	**0.1517**	**0.1153**	**1.9000e-004**	**0.0174**	**4.1100e-003**	**0.0215**	**9.3300e-003**	**4.1100e-003**	**0.0134**	**0.0000**	**16.5886**	**16.5886**	**4.9700e-003**	**0.0000**	**16.7129**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	2.2300e-003	3.3000e-004	1.0000e-005	0.0519	2.0000e-005	0.0520	5.2400e-003	2.0000e-005	5.2600e-003	0.0000	1.0502	1.0502	0.0000	1.7000e-004	1.0995
Vendor	7.5000e-004	0.0499	7.1500e-003	2.7000e-004	1.4025	4.2000e-004	1.4030	0.1417	4.0000e-004	0.1421	0.0000	25.7292	25.7292	7.0000e-005	3.8300e-003	26.8715
Worker	1.7600e-003	1.2900e-003	0.0173	6.0000e-005	1.4008	3.0000e-005	1.4008	0.1410	3.0000e-005	0.1410	0.0000	5.8455	5.8455	8.0000e-005	1.2000e-004	5.8835
Total	**2.5400e-003**	**0.0534**	**0.0248**	**3.4000e-004**	**2.8552**	**4.7000e-004**	**2.8557**	**0.2879**	**4.5000e-004**	**0.2884**	**0.0000**	**32.6249**	**32.6249**	**1.5000e-004**	**4.1200e-003**	**33.8546**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Rig Setup - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2100e-003	0.0101	9.5000e-003	2.0000e-005		4.1000e-004	4.1000e-004		3.9000e-004	3.9000e-004	0.0000	1.7284	1.7284	4.8000e-004	0.0000	1.7403
Total	**1.2100e-003**	**0.0101**	**9.5000e-003**	**2.0000e-005**		**4.1000e-004**	**4.1000e-004**		**3.9000e-004**	**3.9000e-004**	**0.0000**	**1.7284**	**1.7284**	**4.8000e-004**	**0.0000**	**1.7403**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	4.1800e-003	6.1000e-004	2.0000e-005	0.0974	4.0000e-005	0.0974	9.8200e-003	4.0000e-005	9.8600e-003	0.0000	1.9692	1.9692	1.0000e-005	3.1000e-004	2.0616
Vendor	1.2000e-004	8.3100e-003	1.1900e-003	4.0000e-005	0.2338	7.0000e-005	0.2338	0.0236	7.0000e-005	0.0237	0.0000	4.2882	4.2882	1.0000e-005	6.4000e-004	4.4786
Worker	2.4000e-004	1.8000e-004	2.4000e-003	1.0000e-005	0.1946	0.0000	0.1946	0.0196	0.0000	0.0196	0.0000	0.8119	0.8119	1.0000e-005	2.0000e-005	0.8172
Total	**4.1000e-004**	**0.0127**	**4.2000e-003**	**7.0000e-005**	**0.5257**	**1.1000e-004**	**0.5258**	**0.0530**	**1.1000e-004**	**0.0531**	**0.0000**	**7.0692**	**7.0692**	**3.0000e-005**	**9.7000e-004**	**7.3574**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Rig Setup - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.5000e-004	0.0165	0.0122	2.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	1.7284	1.7284	4.8000e-004	0.0000	1.7403
Total	**6.5000e-004**	**0.0165**	**0.0122**	**2.0000e-005**		**5.1000e-004**	**5.1000e-004**		**5.1000e-004**	**5.1000e-004**	**0.0000**	**1.7284**	**1.7284**	**4.8000e-004**	**0.0000**	**1.7403**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	4.1800e-003	6.1000e-004	2.0000e-005	0.0974	4.0000e-005	0.0974	9.8200e-003	4.0000e-005	9.8600e-003	0.0000	1.9692	1.9692	1.0000e-005	3.1000e-004	2.0616
Vendor	1.2000e-004	8.3100e-003	1.1900e-003	4.0000e-005	0.2338	7.0000e-005	0.2338	0.0236	7.0000e-005	0.0237	0.0000	4.2882	4.2882	1.0000e-005	6.4000e-004	4.4786
Worker	2.4000e-004	1.8000e-004	2.4000e-003	1.0000e-005	0.1946	0.0000	0.1946	0.0196	0.0000	0.0196	0.0000	0.8119	0.8119	1.0000e-005	2.0000e-005	0.8172
Total	**4.1000e-004**	**0.0127**	**4.2000e-003**	**7.0000e-005**	**0.5257**	**1.1000e-004**	**0.5258**	**0.0530**	**1.1000e-004**	**0.0531**	**0.0000**	**7.0692**	**7.0692**	**3.0000e-005**	**9.7000e-004**	**7.3574**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Drilling Phase - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1040	0.7299	1.0019	3.1500e-003		0.0267	0.0267		0.0260	0.0260	0.0000	294.7608	294.7608	0.0332	0.0000	295.5895
Total	**0.1040**	**0.7299**	**1.0019**	**3.1500e-003**		**0.0267**	**0.0267**		**0.0260**	**0.0260**	**0.0000**	**294.7608**	**294.7608**	**0.0332**	**0.0000**	**295.5895**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	5.0200e-003	7.3000e-004	2.0000e-005	0.1168	5.0000e-005	0.1169	0.0118	5.0000e-005	0.0118	0.0000	2.3630	2.3630	1.0000e-005	3.7000e-004	2.4740
Vendor	1.1200e-003	0.0748	0.0107	4.0000e-004	2.1038	6.3000e-004	2.1044	0.2126	6.0000e-004	0.2132	0.0000	38.5938	38.5938	1.0000e-004	5.7400e-003	40.3073
Worker	3.2200e-003	2.3600e-003	0.0317	1.2000e-004	2.5681	6.0000e-005	2.5681	0.2585	6.0000e-005	0.2586	0.0000	10.7167	10.7167	1.5000e-004	2.2000e-004	10.7864
Total	**4.4000e-003**	**0.0822**	**0.0432**	**5.4000e-004**	**4.7887**	**7.4000e-004**	**4.7894**	**0.4828**	**7.1000e-004**	**0.4836**	**0.0000**	**51.6735**	**51.6735**	**2.6000e-004**	**6.3300e-003**	**53.5677**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Drilling Phase - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0859	2.1298	1.6091	3.1500e-003		0.0632	0.0632		0.0631	0.0631	0.0000	294.7604	294.7604	0.0332	0.0000	295.5891
Total	**0.0859**	**2.1298**	**1.6091**	**3.1500e-003**		**0.0632**	**0.0632**		**0.0631**	**0.0631**	**0.0000**	**294.7604**	**294.7604**	**0.0332**	**0.0000**	**295.5891**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	5.0200e-003	7.3000e-004	2.0000e-005	0.1168	5.0000e-005	0.1169	0.0118	5.0000e-005	0.0118	0.0000	2.3630	2.3630	1.0000e-005	3.7000e-004	2.4740
Vendor	1.1200e-003	0.0748	0.0107	4.0000e-004	2.1038	6.3000e-004	2.1044	0.2126	6.0000e-004	0.2132	0.0000	38.5938	38.5938	1.0000e-004	5.7400e-003	40.3073
Worker	3.2200e-003	2.3600e-003	0.0317	1.2000e-004	2.5681	6.0000e-005	2.5681	0.2585	6.0000e-005	0.2586	0.0000	10.7167	10.7167	1.5000e-004	2.2000e-004	10.7864
Total	**4.4000e-003**	**0.0822**	**0.0432**	**5.4000e-004**	**4.7887**	**7.4000e-004**	**4.7894**	**0.4828**	**7.1000e-004**	**0.4836**	**0.0000**	**51.6735**	**51.6735**	**2.6000e-004**	**6.3300e-003**	**53.5677**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Rig Decommission - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6200e-003	0.0126	0.0126	3.0000e-005		4.9000e-004	4.9000e-004		4.6000e-004	4.6000e-004	0.0000	2.0813	2.0813	5.1000e-004	0.0000	2.0941
Total	**1.6200e-003**	**0.0126**	**0.0126**	**3.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.0813**	**2.0813**	**5.1000e-004**	**0.0000**	**2.0941**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	4.1800e-003	6.1000e-004	2.0000e-005	0.0974	4.0000e-005	0.0974	9.8200e-003	4.0000e-005	9.8600e-003	0.0000	1.9692	1.9692	1.0000e-005	3.1000e-004	2.0616
Vendor	1.2000e-004	8.3100e-003	1.1900e-003	4.0000e-005	0.2338	7.0000e-005	0.2338	0.0236	7.0000e-005	0.0237	0.0000	4.2882	4.2882	1.0000e-005	6.4000e-004	4.4786
Worker	2.4000e-004	1.8000e-004	2.4000e-003	1.0000e-005	0.1946	0.0000	0.1946	0.0196	0.0000	0.0196	0.0000	0.8119	0.8119	1.0000e-005	2.0000e-005	0.8172
Total	**4.1000e-004**	**0.0127**	**4.2000e-003**	**7.0000e-005**	**0.5257**	**1.1000e-004**	**0.5258**	**0.0530**	**1.1000e-004**	**0.0531**	**0.0000**	**7.0692**	**7.0692**	**3.0000e-005**	**9.7000e-004**	**7.3574**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Rig Decommission - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.5000e-004	0.0197	0.0150	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.0813	2.0813	5.1000e-004	0.0000	2.0941
Total	**8.5000e-004**	**0.0197**	**0.0150**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.0813**	**2.0813**	**5.1000e-004**	**0.0000**	**2.0941**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	4.1800e-003	6.1000e-004	2.0000e-005	0.0974	4.0000e-005	0.0974	9.8200e-003	4.0000e-005	9.8600e-003	0.0000	1.9692	1.9692	1.0000e-005	3.1000e-004	2.0616
Vendor	1.2000e-004	8.3100e-003	1.1900e-003	4.0000e-005	0.2338	7.0000e-005	0.2338	0.0236	7.0000e-005	0.0237	0.0000	4.2882	4.2882	1.0000e-005	6.4000e-004	4.4786
Worker	2.4000e-004	1.8000e-004	2.4000e-003	1.0000e-005	0.1946	0.0000	0.1946	0.0196	0.0000	0.0196	0.0000	0.8119	0.8119	1.0000e-005	2.0000e-005	0.8172
Total	**4.1000e-004**	**0.0127**	**4.2000e-003**	**7.0000e-005**	**0.5257**	**1.1000e-004**	**0.5258**	**0.0530**	**1.1000e-004**	**0.0531**	**0.0000**	**7.0692**	**7.0692**	**3.0000e-005**	**9.7000e-004**	**7.3574**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Facility Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9100e-003	0.0817	0.1033	1.7000e-004		3.2300e-003	3.2300e-003		3.0400e-003	3.0400e-003	0.0000	13.7940	13.7940	3.6000e-003	0.0000	13.8840
Total	**9.9100e-003**	**0.0817**	**0.1033**	**1.7000e-004**		**3.2300e-003**	**3.2300e-003**		**3.0400e-003**	**3.0400e-003**	**0.0000**	**13.7940**	**13.7940**	**3.6000e-003**	**0.0000**	**13.8840**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	2.2300e-003	3.3000e-004	1.0000e-005	0.0519	2.0000e-005	0.0520	5.2400e-003	2.0000e-005	5.2600e-003	0.0000	1.0502	1.0502	0.0000	1.7000e-004	1.0995
Vendor	1.2500e-003	0.0831	0.0119	4.5000e-004	2.3376	7.0000e-004	2.3383	0.2362	6.7000e-004	0.2368	0.0000	42.8819	42.8819	1.2000e-004	6.3800e-003	44.7859
Worker	2.9300e-003	2.1500e-003	0.0289	1.1000e-004	2.3346	6.0000e-005	2.3347	0.2350	5.0000e-005	0.2351	0.0000	9.7425	9.7425	1.4000e-004	2.0000e-004	9.8059
Total	**4.2100e-003**	**0.0875**	**0.0411**	**5.7000e-004**	**4.7241**	**7.8000e-004**	**4.7249**	**0.4764**	**7.4000e-004**	**0.4772**	**0.0000**	**53.6746**	**53.6746**	**2.6000e-004**	**6.7500e-003**	**55.6913**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Facility Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8200e-003	0.1408	0.1096	1.7000e-004		5.9000e-003	5.9000e-003		5.9000e-003	5.9000e-003	0.0000	13.7940	13.7940	3.6000e-003	0.0000	13.8840
Total	**6.8200e-003**	**0.1408**	**0.1096**	**1.7000e-004**		**5.9000e-003**	**5.9000e-003**		**5.9000e-003**	**5.9000e-003**	**0.0000**	**13.7940**	**13.7940**	**3.6000e-003**	**0.0000**	**13.8840**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	2.2300e-003	3.3000e-004	1.0000e-005	0.0519	2.0000e-005	0.0520	5.2400e-003	2.0000e-005	5.2600e-003	0.0000	1.0502	1.0502	0.0000	1.7000e-004	1.0995
Vendor	1.2500e-003	0.0831	0.0119	4.5000e-004	2.3376	7.0000e-004	2.3383	0.2362	6.7000e-004	0.2368	0.0000	42.8819	42.8819	1.2000e-004	6.3800e-003	44.7859
Worker	2.9300e-003	2.1500e-003	0.0289	1.1000e-004	2.3346	6.0000e-005	2.3347	0.2350	5.0000e-005	0.2351	0.0000	9.7425	9.7425	1.4000e-004	2.0000e-004	9.8059
Total	**4.2100e-003**	**0.0875**	**0.0411**	**5.7000e-004**	**4.7241**	**7.8000e-004**	**4.7249**	**0.4764**	**7.4000e-004**	**0.4772**	**0.0000**	**53.6746**	**53.6746**	**2.6000e-004**	**6.7500e-003**	**55.6913**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0153	0.1696	0.1116	9.7000e-004	0.0485	2.1700e-003	0.0507	0.0137	2.0700e-003	0.0158	0.0000	90.6479	90.6479	1.0600e-003	7.0800e-003	92.7841
Unmitigated	0.0153	0.1696	0.1116	9.7000e-004	0.0485	2.1700e-003	0.0507	0.0137	2.0700e-003	0.0158	0.0000	90.6479	90.6479	1.0600e-003	7.0800e-003	92.7841

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	6.40	6.40	6.40	116,546	116,546
Total	6.40	6.40	6.40	116,546	116,546

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	50.00	50.00	50.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.000000	0.000000	0.000000	0.000000	0.950000	0.000000	0.000000	0.050000	0.000000	0.000000	0.000000	0.000000	0.000000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.0000e-005	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6300e-003	1.6300e-003	0.0000	0.0000	1.7400e-003
Unmitigated	8.0000e-005	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6300e-003	1.6300e-003	0.0000	0.0000	1.7400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6300e-003	1.6300e-003	0.0000	0.0000	1.7400e-003
Total	**8.0000e-005**	**1.0000e-005**	**8.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.6300e-003**	**1.6300e-003**	**0.0000**	**0.0000**	**1.7400e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6300e-003	1.6300e-003	0.0000	0.0000	1.7400e-003
Total	**8.0000e-005**	**1.0000e-005**	**8.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.6300e-003**	**1.6300e-003**	**0.0000**	**0.0000**	**1.7400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number
Heater - 4 mmbtu/hr	1
Production Tanks	1
Well Engine	1

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Heater - 4 mmbtu/hr	0.0480	0.0965	0.7360	0.0250		0.0665	0.0665		0.0665	0.0665	0.0000	0.4214	0.4214	0.4214	0.0000	10.9561
Production Tanks	0.2000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Well Engine	0.0167	0.2702	0.0492	1.0000e-004		5.3000e-003	5.3000e-003		5.3000e-003	5.3000e-003	0.0000	6.7100e-003	6.7100e-003	0.0000	0.0000	6.7100e-003
Total	**0.2647**	**0.3667**	**0.7852**	**0.0251**		**0.0718**	**0.0718**		**0.0718**	**0.0718**	**0.0000**	**0.4281**	**0.4281**	**0.4214**	**0.0000**	**10.9628**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

11.0 Vegetation

BIDR.
Fugitive Emission Calculations

Number of Components	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total	
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas
Wash Tank	5	22	10	24	75	90	0	0	0	0	6	4	96	140
Stock Tank	5	22	10	16	75	90	0	0	0	0	6	4	96	132
Water Tank	5	22	10	16	75	90	0	0	0	0	6	4	96	132

Emission Factors - (AP-42: CAPCOA Table IV-2c)	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others	
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas
<10,000 ppmv - kg/hr/source	2.30E-05	2.80E-05	1.40E-05	3.50E-05	8.00E-06	1.20E-05	0.00E+00	9.96E-04	1.50E-05	2.40E-05	5.70E-05	1.47E-04
>10,000 ppmv - kg/hr/source	0.00E+00	6.10E-02	0.00E+00	1.39E-01	0.00E+00	2.59E-02	0.00E+00	8.90E-02	7.11E-02	5.49E-02	0.00E+00	1.38E-01
<10,000 ppmv - lb/yr/source	0.44	0.54	0.27	0.67	0.15	0.23	-	19.19	0.29	0.46	1.10	2.83
>10,000 ppmv - lb/yr/source	-	1,175.59	-	2,671.10	-	499.14	-	1,715.21	1,370.24	1,058.03	-	2,651.83
<10,000 ppmv - lb/yr/source	1.214E-03	1.478E-03	7.392E-04	1.848E-03	4.224E-04	6.336E-04	0.000E+00	5.259E-02	7.920E-04	1.267E-03	3.010E-03	7.762E-03
>10,000 ppmv - lb/yr/source	0.000E+00	3.221E+00	0.000E+00	7.318E+00	0.000E+00	1.368E+00	0.000E+00	4.699E+00	3.754E+00	2.899E+00	0.000E+00	7.265E+00

Emissions - lb/year	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total - lb/year			
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Total	Tons/yr
Wash Tank	2	12	3	16	12	21	-	-	-	-	7	11	23	60	83	0.04
Stock Tank	2	12	3	11	12	21	-	-	-	-	7	11	23	55	78	0.04
Water Tank	2	12	3	11	12	21	-	-	-	-	7	11	23	55	78	0.04
															239	

Emissions - lb/day	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total - lb/day			
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Total	Tons/day
Wash Tank	0.01	0.03	0.01	0.04	0.03	0.06	-	-	-	-	0.02	0.03	0.06	0.16	0.23	0.00
Stock Tank	0.01	0.03	0.01	0.03	0.03	0.06	-	-	-	-	0.02	0.03	0.06	0.15	0.21	0.00
Water Tank	0.01	0.03	0.01	0.03	0.03	0.06	-	-	-	-	0.02	0.03	0.06	0.15	0.21	0.00
														0.47		0.00

Emission Factors - (AP-42: CAPCOA Table IV-2c)	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others	
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas
<10,000 ppmv - lb/day/source	1.217E-03	1.481E-03	7.407E-04	1.852E-03	4.233E-04	6.349E-04	0.000E+00	5.270E-02	7.937E-04	1.270E-03	3.016E-03	7.778E-03
>10,000 ppmv - lb/day/source	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.762E+00	0.000E+00	0.000E+00	0.000E+00
<10,000 ppmv - lb/yr/source	2.345E+01	2.855E+01	1.428E+01	3.569E+01	8.158E+00	1.224E+01	0.000E+00	1.016E+03	1.530E+01	2.447E+01	5.812E+01	1.499E+02
>10,000 ppmv - lb/yr/source	0.000E+00	6.220E+04	0.000E+00	1.413E+05	0.000E+00	2.641E+04	0.000E+00	9.075E+04	7.250E+04	5.598E+04	0.000E+00	1.403E+05

159.07	additional
398.10	Tanks
0.20	Total

BIDR.
Fugitive Emission Calculations

Number of Components	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total	
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas
Separator #1		6		22		40						4	0	72
VRC - New Unit		5		5		100		2				5	0	117
Separator #2		6		22		40						4	0	72

Emission Factors - (AP-42: CAPCOA Table IV-2c)	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others	
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas
<10,000 ppmv - kg/hr/source	2.30E-05	2.80E-05	1.40E-05	3.50E-05	8.00E-06	1.20E-05	0.00E+00	9.96E-04	1.50E-05	2.40E-05	5.70E-05	1.47E-04
>10,000 ppmv - kg/hr/source	0.00E+00	6.10E-02	0.00E+00	1.39E-01	0.00E+00	2.59E-02	0.00E+00	8.90E-02	7.11E-02	5.49E-02	0.00E+00	1.38E-01
<10,000 ppmv - lb/yr/source	0.44	0.54	0.27	0.67	0.15	0.23	-	19.19	0.29	0.46	1.10	2.83
>10,000 ppmv - lb/yr/source	-	1,175.59	-	2,671.10	-	499.14	-	1,715.21	1,370.24	1,058.03	-	2,651.83

Emissions - lb/year	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total				
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Total	lb/day	Tons/yr
Separator #1	-	3	-	15	-	9	-	-	-	-	-	11	-	39	39	0.11	0.02
VRC - New Unit	-	3	-	3	-	23	-	38	-	-	-	14	-	82	82	0.22	0.04
Separator #2	-	3	-	15	-	9	-	-	-	-	-	11	-	39	39	0.11	0.02
															159	0.44	0.08

SSPE	Rate	Emission Factors - Permitted Limits						Potential Emissions (lb/yr)					
Description	mmbtu/yr	Nox	VOC	CO	PM10	SOX	Units	Nox	VOC	CO	PM10	SOX	CO2 - Potential (mt)
Heater - 4.0 mmbtu/hr	17,520	0.0110	0.0055	0.084	0.008	0.003	lb/mmbtu	193	96	1,472	133	50	929
													EF 53.02 kg/CO2

* based on 12 hrs/day for 365 days/yr

Heater Nox based on 9 ppm (Rule 4307)

25 HP NG Engine (0.0636 mmbtu/hr)	Nox	VOC	CO	PM10	SOX	CO2e
AP-42 3.2 Factors - NG Engine	1.94	1.20E-01	3.53E-01	3.84E-02	5.88E-04	53.02 kg/mt
Emissions @ 50% Load (lb/yr)	540.42	33.43	98.33	10.70	0.16	14.77
lb/day	1.4806	0.0916	0.2694	0.0293	0.0004	0.0405
tpy	0.2702	0.0167	0.0492	0.0053	0.0001	0.0074

EXHIBIT I

TRAFFIC STATEMENT

The Project will be operated with up to six employees and contractors visiting the site daily as needed for maintenance and operations. The Project is on fenced private property.

A traffic study is required if the project either exceeds 50-trip threshold in either the AM or PM peak hours or if the VMT exceeds the significance threshold for the greater Visalia area. The *Traffic Statement* (Exhibit I) was prepared and shows that both the 50-trip threshold and the VMT significance threshold were not exceeded. Therefore, the project is not anticipated to result in a significant impact under CEQA and the long-term impacts to local air quality due to CO concentrations will be ***less than significant***.

EXHIBIT J

HEALTH RISK ANALYSIS

Envirotech
Consultants
5400 Rosedale Hwy
Bakersfield, CA 93308
ph. 661.377.0073

Health Risk Screening/Assessment

Project Title

Exploratory Well Project –
South of McDonald Anticline Oil Field

Project Location

Section 29 of Township 28S, Range 20E
County of Kern, California
APN: 085-170-09

August 20, 2024

Submitted to:

BIDR, LLC.

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Exhibit A Prioritization Model Results with Calculations
Exhibit B Receptor Map

1.0 INTRODUCTION

The risks associated with the project for sensitive receptors, including residences, businesses, and schools, was calculated using the 'Prioritization Calculator'. The calculator was developed by San Joaquin Valley Air Pollution Control District (SJVAPCD) using the California Air Pollution Control Officers Association's (CAPCOA) methodology.

2.0 MODEL ASSUMPTIONS

The prioritization calculation evaluated the impacts to receptors for the identified toxic substances. The toxic substances associated with this project included diesel exhaust emissions for the construction phase. The operational phase includes both diesel exhaust and fugitive component emissions. The toxic emissions were calculated based off the AQIA criteria pollutant emissions.

Toxic Profiles were based on the AB2588 "Hotspots" Air Toxic Profiles:

- Construction Emissions
    - **Profile ID 136 – Diesel Engine Particulate Matter** used for onsite diesel emissions and transport diesel emissions within ¼ mile of the entrance to the lease.
        - Hours per year equal the total number of days of construction multiplied by hours per day of construction per phase. Total 'Diesel PM10 Exhaust' value was divided by hours per year to get max hourly emissions.
- Operational Emissions
    - **Profile ID 136 – Diesel Engine Particulate Matter** used for onsite diesel emissions, transport diesel emissions within ¼ mile of the entrance to the lease, and for workover emissions.
        - Hours per year equal the total hours in year for a constant process. Total 'Diesel PM10 Exhaust' value was divided by hours per year to get max hourly emissions.
        - 'Worst-case' estimate of one workover per year per well.

    - **Profile ID 204 – Oilfield Equipment Fugitive – District**
        - Used for incremental fugitive emissions for the new wells and associated piping and equipment.

The nearest residential, business and sensitive receptors are shown in Exhibit B.

- Residence – nearest residence 2,347 meters to the south
- Business – nearest office 2,347 meters to the south
- Sensitive – nearest school 6,800 meters to the east

** The facility centroid was the basis for the receptor distances.*

3.0 POTENTIAL AFFECT ON RECEPTORS

The air quality impact of the proposed project is not likely to affect the nearest receptors. The results of the Prioritization Calculator, based on the receptor distances, is less than 10 for each phase (construction and operational). Based on the receptor proximity and proximity factors, the calculated Total Max Score was 0.697 for receptors greater than 2,000 meters. The construction and operational phases will happen in the same year, so they are additive. Therefore, the risk to the nearest receptor is expected to be *less than significant*.

4.0 REFERENCES

SJVUAPCD, *Prioritization Calculator,* December 1, 2022.

EXHIBIT A

PRIORITIZATION CALCULATOR WITH CALCULATIONS

Name

Prioritization Calculator

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.				
Author or updater	Matthew Cegielski	*Last Update*	September 14, 2023		
Facility:	BIDR				
ID#:				0.0767	CalEEMOD tpy
Project #:				153.4	lb/yr
Unit and Process#	Construction			0.564	lb/hr
Operating Hours hr/yr (Total of hours per phase)	272.00				

Receptor Proximity and Proximity Factors	Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100 1.000	3.54E+02	1.69E+01	0.00E+00	3.54E+02
100≤R<250 0.250	8.86E+01	4.23E+00	0.00E+00	8.86E+01
250≤R<500 0.040	1.42E+01	6.77E-01	0.00E+00	1.42E+01
500≤R<1000 0.011	3.90E+00	1.86E-01	0.00E+00	3.90E+00
1000≤R<1500 0.003	1.06E+00	5.08E-02	0.00E+00	1.06E+00
1500≤R<2000 0.002	7.09E-01	3.38E-02	0.00E+00	7.09E-01
2000<R 0.001	3.54E-01	1.69E-02	0.00E+00	3.54E-01

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

Substance	CAS# Finder
Diesel engine exhaust, particulate matter (Diesel PM)	9901

Construction

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

Substance	CAS#	MW Correction	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Corrected Annual Emissions (lbs/yr)	Corrected Maximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	**1.0000**	1.53E+02	5.64E-01	1.53E+02	5.64E-01	5.64E-01	3.54E+02	1.69E+01	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
hours worst-case is 34 days at 8 hrs/day = 272 hrs		**0.0000**			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Name

Prioritization Calculator

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.				
Author or updater	Matthew Cegielski	*Last Update*	September 14, 2023		
Facility:	BIDR		VOC	0.2801	
ID#:			PM10	0.0740	CalEEMOD tpy
Project #:				148.00	lb/yr
Unit and Process#	Operational			8,760.00	hr/yr
Operating Hours hr/yr	8,760.00				

Receptor Proximity and Proximity Factors		Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100	**1.000**	3.42E+02	5.32E-01	4.52E-02	3.42E+02
100≤R<250	**0.250**	8.56E+01	1.33E-01	1.13E-02	8.56E+01
250≤R<500	**0.040**	1.37E+01	2.13E-02	1.81E-03	1.37E+01
500≤R<1000	**0.011**	3.77E+00	5.85E-03	4.97E-04	3.77E+00
1000≤R<1500	**0.003**	1.03E+00	1.60E-03	1.36E-04	1.03E+00
1500≤R<2000	**0.002**	6.85E-01	1.06E-03	9.04E-05	6.85E-01
2000<R	**0.001**	3.42E-01	5.32E-04	4.52E-05	3.42E-01

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

Substance	CAS# Finder
Diesel engine exhaust, particulate matter (Diesel PM)	9901

Operational

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

Substance	CAS#	MW Correction	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Corrected Annual Emissions (lbs/yr)	CorrectedMaximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	**1.0000**	1.48E+02	1.69E-02	1.48E+02	1.69E-02	1.69E-02	3.42E+02	5.07E-01	0.00E+00
Benzene	**71432**	**1.0000**	1.96E+00	2.24E-04	1.96E+00	2.24E-04	2.24E-04	4.38E-01	1.12E-02	1.24E-02
Hydrogen sulfide	**7783064**	**1.0000**	8.01E+00	9.14E-04	8.01E+00	9.14E-04	9.14E-04	0.00E+00	1.37E-02	3.27E-02
Toluene	**108883**	**1.0000**	1.90E+00	2.17E-04	1.90E+00	2.17E-04	2.17E-04	0.00E+00	7.77E-05	6.52E-05
Xylene	**1330207**	**1.0000**	3.92E+00	4.48E-04	3.92E+00	4.48E-04	4.48E-04	0.00E+00	9.59E-05	3.05E-05
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		0.0000			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
							Totals	**3.42E+02**	**5.32E-01**	**4.52E-02**

Receptor Proximity and Proximity Factors		Construction	Operational	
		Max Score	**Max Score**	**Total Max Score**
0< R<100	**1.000**	3.54E+02	3.42E+02	6.97E+02
100≤R<250	**0.250**	8.86E+01	8.56E+01	1.74E+02
250≤R<500	**0.040**	1.42E+01	1.37E+01	2.79E+01
500≤R<1000	**0.011**	3.90E+00	3.77E+00	7.66E+00
1000≤R<1500	**0.003**	1.06E+00	1.03E+00	2.09E+00
1500≤R<2000	**0.002**	7.09E-01	6.85E-01	1.39E+00
2000<R	**0.001**	3.54E-01	3.42E-01	6.97E-01

	Construction - Toxic Profile 136				
CAS#	Pollutant Name	EF	EF Units	Max Hr	Annual
71432	**Diesel engine exhaust, particulate matter (Diesel PM)**	1.00E+00	lb/lb PM10 exaust	0.00E+00	0.00E+00
	Days of Construction	34.00			
	Hours per Day (minimum)	8.00			
	Total Hours per Year for Construction	272.00			
	Exhaust PM10 - CalEEMOD	0.0767	tpy		
	Exhaust PM10 - CalEEMOD	153.40	lb/yr		
	Exhaust PM10 - CalEEMOD	0.5640	max hour		

	Operational - Toxic Profile 136				
CAS#	Pollutant Name	EF	EF Units	Max Hr	Annual
71432	**Diesel engine exhaust, particulate matter (Diesel PM)**	1.00E+00	lb/lb PM10 exaust	0.00E+00	0.00E+00
	Days of Construction	365.00			
	Hours per Day (minimum)	24.00			
	Total Hours per Year for Construction	8,760.00			
	Exhaust PM10 - CalEEMOD	0.0740	tpy		
	Exhaust PM10 - CalEEMOD	148.00	lb/hr		
	Exhaust PM10 - CalEEMOD	0.0169	max hour		

	Operational Well - Toxic Profile 204				
CAS#	Pollutant Name	EF	EF Units	Max Hr	Annual
71432	Benzene	3.50E-03	lb/lb VOC	2.24E-04	1.96E+00
7783064	Hydrogen Sulfide	1.43E-02	lb/lb VOC	9.14E-04	8.01E+00
108883	Toluene	3.40E-03	lb/lb VOC	2.17E-04	1.90E+00
1330207	Xylenes (mixed)	7.00E-03	lb/lb VOC	4.48E-04	3.92E+00
	VOC - CalEEMOD	2.80E-01	tpy		
		560.2	lb/yr		
		0.06395	max hr		

EXHIBIT B
RECEPTOR MAP


BIDR, LLC
Exploratory Well Project -
South of McDonald Anticline Oil Field
Legend
BIDR Well Pad
Residential Receptor - 7,700 feet
BIDR Well Location
RES Receptor BIDR100
Google Earth
Image © 2024 Airbus
4000 ft
N

Appendix B Biological Technical Report

DRAFT

Appendix B Biological Technical Report

BIOLOGICAL TECHNICAL REPORT FOR THE WESTSIDE TREND EXPLORATION WELL PROJECT

KERN COUNTY, CALIFORNIA

Project No. 2302-0472

Prepared for:

Bidr, LLC.
19100 7th Standard Road
McKittrick, CA, 93251

Prepared by:

Padre Associates, Inc.
3500 Coffee Road, Suite B
Bakersfield, California 93308

DECEMBER 2023

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

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1.0 INTRODUCTION

1.1 PURPOSE AND NEED

Bidr, LLC. is proposing the Westside Trend Exploration Well Project (Project), located in western Kern County, California (**Appendix A. Figure 1**). This Project will involve the drilling of an exploration well.

1.2 FEDERALLY LISTED SPECIES

Based on both a literature review of database queries and field investigations, which will be discussed in sections below, it has been determined that the following federally listed wildlife and plant species have a potential to occur or have been reported within the general region of the Project area:

- Blunt-nosed leopard lizard (*Gambelia sila*) – Federally Endangered (FE), Fully Protected (FP)
- California condor (*Gymnogyps californianus*) – FE
- California jewelflower (*Caulanthus californicus*) – FE
- Giant kangaroo rat (*Dipodomys ingens*) – FE
- Kern mallow (*Eremalche kernensis*) – FE
- Monarch butterfly (*Danaus plexippus*)- California overwintering population –Federally Candidate Endangered (FCE)
- San Joaquin kit fox (*Vulpes macrotis mutica*) – FE
- San Joaquin woollythreads (*Monolopia congdonii*) – FE

1.3 STATE LISTED SPECIES

Several of the Federally listed species mentioned above are also listed in the State of California. Wildlife and plant species that are state listed and have the potential to occur or have been reported within the general region of the Project area are listed below:

- Blunt-nosed leopard lizard (*Gambelia sila*) – State Endangered (SE),(FP)
- California jewelflower (*Caulanthus californicus*) – SE
- Crotch's bumblebee (*Bombus crotchii*) – State Candidate Endangered (SCE)
- Giant kangaroo rat (*Dipodomys ingens*) – SE
- San Joaquin antelope squirrel (*Ammospermophilus nelsoni*) – State Threatened (ST)
- San Joaquin kit fox (*Vulpes macrotis mutica*) – ST
- Swainson's hawk (*Buteo swainsoni*) – ST
- Temblor legless lizard (*Anniella alexandrerae*) – State Candidate Endangered (SCE)

2.0 DESCRIPTION OF THE PROPOSED ACTION

2.1 PROJECT LOCATION

The Project area, as identified in **Appendix A Figure 1**, encompasses approximately 2.1 acres within the San Joaquin Valley in the western portion of Kern County. The Project site is located approximately 10 miles south of Blackwell's Corner and approximately 8 miles west of Highway 33 and 7th Standard Road. The Project occurs within the northern half of APN 085-170-09 and is located in Section 29, Township 28 South, Range 20 East, towards the northwest corner of Carneros Rock United States Geological Survey 7.5-minute quadrangle (USGS quad). The elevation profile of the Project site is approximately 318 to 326 meters (1,045 to 1,071 feet). The Project site is west of the Belridge Oilfield.

2.1.1 Proposed Project

The Project involves the drilling of an exploration well. The well site will be located in annual grassland habitat that is heavily influenced by the presence of grazing cattle, adjacent to a dirt road.

3.0 EXISTING ENVIRONMENTAL CONDITIONS

3.1 PHYSICAL SETTING

The Project location is in Kern County, within the central region of California and the third largest county in the state, consisting of approximately 8,202 square miles. The geography of Kern County consists of a diverse landscape of agricultural lands, mountains, and deserts. Kern County's location warrants itself to oil and gas exploration, which includes development activities to support such an industry. Kern County is the most productive county in California with almost 80.6 million barrels being produced in 2020 (CEC, 2023). Adjacent property uses include existing oil and gas leases approximately 3-4 miles from the Project and grazing land surrounding the Project site.

3.2 GEOLOGY AND CLIMATE

The Project occurs within a flat landscape ranging from approximately 318 meters to approximately 326 meters (1,045 feet to 1,071 feet). The soil classification mapped within the Project boundaries includes Panoche clay loam (USDA, 2023). Bacon Hills is approximately 2 miles east and Carneros Rocks and Carneros Canyon are approximately 2 miles south of the Project. The Project site is just east of the foothills of the Temblor Range.

The Project occurs within areas subject to various phases of the Mediterranean climate, which is characterized by warm, dry summers and mild, wet winters. The average rainfall in the Buttonwillow area of Kern County (20 miles east of Project location) is 5.56 inches (NOAA, 2023). The average temperature in the Buttonwillow area is 64-degrees Fahrenheit (NOAA, 2023). Annual high temperatures for the Buttonwillow area during summer months are between 91 and 98-degrees Fahrenheit. Annual low temperatures during the winter months are between 35 and 45-degrees Fahrenheit (NOAA, 2023).

3.3 RIVERS AND STREAMS

No naturally occurring rivers, streams or lakes were observed within the Project boundaries. The nearest aquatic feature, Carneros Creek, is approximately 0.2-mile west of the Project. Carneros Creek is defined by the National Hydrology Dataset (NHD) as an intermittent steam/river and by the National Wetland Inventory (NWI) as an intermittent riverine feature. An intermittent system may contain flowing water for only part of the year. When water is not flowing it may remain in isolated areas or dry up completely (ERMA, 2023). There are several other flowlines and unnamed intermittent and ephemeral water features surrounding the Project area (**Appendix A Figure 3**). However, no Project activities are planned within any aquatic features. No disturbance or impact is anticipated to any of the above-mentioned aquatic features.

3.4 CURRENT LAND USE

The Project occurs approximately 6 miles southwest of the North Belridge Oilfield and 3 miles northwest of the Chico-Martinez Oilfield, both of which are active oilfields. Oil production activities and infrastructure, such as above-ground tanks, above and below-ground pipelines, and

both paved/unpaved roads are present within the oilfields. In the more immediate area around the Project site, land use is dominated by dirt roads and cattle grazing.

3.5 LANDCOVER TYPES

The habitat within the Project area consists of annual (non-native) grassland (**Appendix B Project Photos**). A detailed description of the dominant habitat community and landcover observed is provided below.

3.5.1 Annual (non-native) Grassland

Dominant species in this habitat are typically introduced, non-native grasses (Kie, 2005). An annual grassland community is characterized by a sparse to dense cover of low (<1 meter) annual grasses and native and non-native herbaceous species (Sawyer and Keeler-Wolf, 2009). Shrubs and sub-shrubs are sometimes scattered in grasslands but do not dominate the vegetation. This vegetation type may be classified as *Avena spp. - Bromus spp.* Herbaceous Semi-Natural Alliance (Wild oats and annual brome grasslands) according to the online Manual of California Vegetation (California Native Plant Society, 2023b).

4.0 THREATENED, ENDANGERED, OR PROPOSED THREATENED, SPECIES

4.1 DESKTOP ANALYSIS

A desktop analysis was conducted to identify any threatened, endangered or special-status species of flora and fauna that may be present within or surrounding the Project area. A query for Carneros Rocks and eight surrounding USGS quads (Las Yeguas Ranch, Shale Point, Blackwells Corner, Lost Hills, Belridge, Reward, McKittrick Summit, and Simmler) was conducted using the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Data Base (CNDDB), California Native Plant Society (CNPS) Rare Plant Inventory List, United States Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (iPaC) planning tool, and USFWS Critical Habitat Report. The sensitive plants and wildlife that have the potential to occur within or near the Project area are presented in Tables 4-1 and 4-2. Additionally, **Appendix A Figure 2** depicts all CNDDB occurrences within three miles of the Project area.

Table 4-1. Threatened, endangered, and/or special-status plant species with the potential to occur within or near the Project area.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Probability of Occurrence
Allium howellii var. *howellii* Howell's onion	-/4.3	Valley and foothill grassland, grassy slopes; sometimes within clay or serpentinite soils; 50-2200 m.	Mar-Apr	Low– No records of the species within the Project's quad. Clay soil is present in the Project area. There is a record of the species 9 miles northwest of the Project (Calflora, 2023).
Amsinckia furcata Forked fiddleneck	-/4.2	Cismontane woodland, valley and foothill grassland, semi-barren loose, shaly slopes; 50-1000 m.	Feb-May	Low – Potential habitat is present. No recorded occurrences within the Project quad. The nearest occurrence is in the Carrizo Plain National Monument.
Androsace elongate ssp. *acuta* California androsace	-/4.2	Slopes within Chapparal, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, foothill woodland; 150-1305 m.	Mar-Jun	Absent – No recorded observations within the Project area or quad. Records of the species are primarily in areas with foothills.
Antirrhinum ovatum Oval-leaved snapdragon	-/4.2	Chapparal, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland, on gentle and open slopes, disturbed areas, sometimes gypsum, often in alkaline soils and sometimes in clay soils; 200-1000 m.	May-Nov	Moderate – There is a record of this species 4.8 miles north of the Project area (CCH1, 2023). Clay soil is present. Slopes are not present within the Project area but are in the surrounding area.
Atriplex coronata var. coronata Crownscale	-/4.2	Chenopod scrub, valley and foothill grassland, vernal pools, alkaline and clay soils; 1-590 m.	Mar-Oct	Low – Multiple occurrences near McKittrick, Reward and Lost Hills. Clay soils and grassland habitat are present, however, no records within Project location or quad.

Table 4-1. Threatened, endangered, and/or special-status plant species with the potential to occur within or near the Project area.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Probability of Occurrence
Atriplex coronata var. vallicola Lost Hills crownscale	-/1B.2	Chenopod scrub, valley and foothill grassland, freshwater wetlands, dry ponds, alkaline soils; 50-635 m.	Apr-Sep	Absent – Wetlands, vernal pools/ponds are not present within the Project site. No occurrences of species in Project quad.
Atriplex flavida Carrizo Plain crownscale	-/1B.3	Chenopod scrub, valley and foothill grassland, vernal pools in alkaline soils; 585-605 m.	Mar-Jul	Absent – No records of this species in Kern County. Project site is not within elevation range for the species.
Canbya candida White pygmy-poppy	-/4.2	Joshua tree woodland, desert scrub, pinyon and juniper woodland in granitic, gravelly and sandy soils; 600-1450 m.	Mar-Jun	Absent – Habitat is not present within the Project site. Project site is outside of the elevation range for the species.
Caulanthus californicus California jewelflower	FE, SE/1B.1	Chenopod scrub, valley and foothill grassland, pinyon and juniper woodland, flats, slopes, within non-alkaline, sandy substrate; 61–1000 m.	Feb-May	Low – No records within Project quad. Grassland habitat is present. Records near Lost Hills, Carrizo Plain, and McKittrick.
Caulanthus lemmonii Lemmon's jewelflower	-/1B.2	Pinyon and juniper woodland, valley and foothill grassland; 80-1580 m.	Feb-May	Low – No records within the Project area or quad. Habitat is present. Records within the McKittrick Summit and Reward quads.
Clarkia xantiana ssp. *parviflora* Kern Canyon clarkia	-/4.2	Chenopod scrub, cismontane woodland, valley and foothill grassland, roadsides, slopes, rocky and sandy soils; 700-3620 m.	May-Jun	Absent – Project is outside of elevation range for species.
Delphinium recurvatum Recurved larkspur	-/1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland; within alkaline substrate; 3-790 m.	Mar-June	Moderate – Habitat present. However, requires poorly drained, fine, alkaline soils and *Atriplex* scrubs (Jepson, 2023). Project area has non-alkaline soils and no *Atriplex* scrubs.
Eremalche parryi ssp. *kernensis* Kern mallow	FE/1B.2	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland; dry, open sandy to clay soils; often at edge of balds; alkali flats; 70-1290 m.	Jan-May	Moderate – Species record 8 miles southeast of Project site, and various records near Belridge. Project site has clay soils and grassland. No records within Project location or quad.
Eriastrum hooveri Hoover's eriastrum	FD/4.2	Chenopod scrub, valley and foothill grassland, pinyon juniper woodland; within alkaline gravelly substrate; 50-915 m.	Mar-July	Low- No gravelly substrate observed within the Project area. No records within the Project quad, but multiple records in surrounding quads.

Table 4-1. Threatened, endangered, and/or special-status plant species with the potential to occur within or near the Project area.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Probability of Occurrence
Eriogonum gossypinum Cottony buckwheat	-/4.2	Chenopod scrub and valley and foothill grassland within clay substrate; 100-550 m.	Mar-Sep	Moderate – Grassland habitat and clay substrate is present. Record of species 2.7 miles east of the Project site.
Eriogonum nudum var. indictum Protruding buckwheat	-/4.2	Chaparral, chenopod scrub, cismontane woodland in clay and serpentinite soils; 150-1463 m.	May-Oct	Absent – Habiat is not present within the Project area.
Eriogonum temblorense Temblor buckwheat	-/1B.2	Valley and foothill grassland, clay and sandstone; 300-1000 m.	May-Sep	Absent– Grassland habitat and clay soil are present within the Project site. Multiple records in Carneros Rock quad near Carneros Canyon. However, records are in hillier areas.
Eryngium spinosepalum Spiny-sepaled button-celery	-/1B.2	Valley and foothill grassland, usually occurs in wetlands, vernal pools; 80-975 m.	Apr-Jun	Absent – Wetlands are not present within the Project site. Quad with nearest record is in Simmler.
Eschscholzia hypecoides San Benito poppy	-/4.3	Chaparral, cismontane woodland, valley and foothill grassland, grassy areas in woodlands and chaparral, clay and serpentine soils; 200-1500 m.	Mar-Jun	Absent – Project is outside of the California Floristic Province, Inner South Coast Ranges, in which the species is found.
Eschscholzia lemmonii ssp. *kernensis* Tejon poppy	-/1B.1	Chenopod scrub, valley and foothill grassland; 160-1000 m.	Mar-May	Absent – Project is outside known range of Western Transverse Ranges and Tehachapi Mountain area (Jepson eFlora, 2023). No records within the Project area.
Eschscholzia rhombipetala Diamond-petaled California poppy	-/1B.1	Valley and foothill grassland in alkaline and clay soils; 0-975 m.	Mar-Apr	Absent – No records within the Project area or quad. Records are within the foothills of the Coast Range.
Fritillaria agrestis Stinkbells	-/4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland, clay and serpentine (sometimes) soils; 10-1555 m.	Mar-Jun	Absent – Outside of the known range (Calflora 2023).
Lasthenia chrysantha Alkali-sink goldfields	-/1B.1	Vernal pools, alkaline; 0-200 m.	Feb-Apr	Absent – No habitat present within the Project area. Project is outside of elevation range for the species.
Lasthenia ferrisiae Ferris' goldfields	-/4.2	Vernal pools, wetlands usually in alkaline or clay substrate; 20-700m	Feb-May	Absent – No wetland habitat present, not reported within general area. None

Table 4-1. Threatened, endangered, and/or special-status plant species with the potential to occur within or near the Project area.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Probability of Occurrence
				have been observed within the Project area.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	-/1B.1	Playas, marshes and swamps, vernal pools, coastal salt marsh, freshwater wetlands, alkali sink, wetland-riparian; 1-1220 m.	Feb-Jun	Absent – No wetland habitat present, not reported within general area. None have been observed within the Project area.
Layia heterotricha Pale-yellow layia	-/1B.1	Cismontane woodland, coastal scrub. Pinyon and juniper woodland, valley, and foothill grasslands, sometimes in alkaline or clay substrate; 300-1705m	Mar-Jun	Absent – Outside of the known range (CalFlora, 2023).
Layia munzii Munz's tidy-tips	-/1B.1	Chenopod scrub, valley and foothill grassland in alkaline clay soils; 150-700 m.	Mar-Apr	Absent – No records within Carneros Rocks (Project) quad. Alkaline soil is not present within the Project site. Grassland and clay soil present within the Project site.
Lepidium jaredii ssp. jaredii Jared's pepper-grass	-/1B.2	Valley and foothill grassland in alkaline and adobe soils, washes and slopes, alluvial fans; 335-1005 m.	Mar-May	Absent – Project site is within the geographic range for the species, but outside of the elevation range. Soil preference and microhabitat are not present.
Madia radiata Showy golden madia	-/1B.1	Cismontane woodland, valley and foothill grassland, grassy and open slopes; 25-1215 m.	Mar-May	Absent – Project is outside of the California Floristic Province, Inner South Coast Ranges, in which the species is found.
Monolopia congdonii San Joaquin woollythreads	FE/1B.2	Chenopod scrub and valley and foothill grassland in sandy soils; 60-800 m.	Feb-May	Moderate – Padre has observed a population of the species approximately 2.6 miles north of the Project.
Puccinellia simplex California alkali grass	-/1B.2	Chenopod scrub, meadow and seep, valley and foothill grassland, vernal pool, saline flats, and mineral springs; 2 – 930 m.	Mar- May	Absent – No habitat present. Occurs in saline flats, mineral springs which Project lacks. No recorded observations within the Project area.
Stylocline citroleum Oil neststraw	-/1B.1	Open, stable, often crusted sand, clay, dry drainage edges, between *Atriplex* shrubs, chenopod scrub; coastal scrub; clay; 50-400 m.	March-April	Absent – Scrub habitat not present. No occurrences in the Project quad.

Table 4-1. Threatened, endangered, and/or special-status plant species with the potential to occur within or near the Project area.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Probability of Occurrence
Trichostema ovatum San Joaquin bluecurls	-/4.2	Chenopod scrub and valley and foothill grassland; 65-320 m.	April-Oct	High- Habitat present. No occurrences in the Project quad. The closest occurrence is 21 miles east (CNDDB) A species in the same genus *T. lanceolatum* was observed during surveys at the Project. *T. ovatum* was not observed.

Listing Status/Rare Plant Rank Codes:

CCH = Consortium of California Herbaria
CNNDB = California Natural Diversity Database Info (CDFW)
FD = Federally delisted (USFWS)
FE = Federally-listed Endangered (USFWS)
SE = State-listed Endangered (CDFW)

CNPS (California Native Plant Society) Codes, California Rare Plant Rank:
1B = Plants Rare, Threatened, or Endangered in California and Elsewhere
4 = Watch List: Limited Distribution
0.1 = Seriously Threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 = Fairly Threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

Table 4-2. Threatened, endangered, and/or sensitive wildlife species with the potential to occur within or near the Project area.

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Invertebrates			
Branchinecta lynchi Vernal pool fairy shrimp	FT/-/-	Valley and foothill grassland, vernal pool, and wetland. Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains in astatic rain-filled pools. Inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Absent-No habitat present or reported within the general area. Project site lacks vernal pools and wetlands.
Bombus crotchii Crotch bumble bee	-/SCE/-	The Sierra-Cascade crest west to the coast of California and south to Mexico. Live in shrublands and grasslands and nest underground. Food plants include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Lupinus, Saliva Eriogonum*, *Asclepias*, *Eschscholzia*, *Chaenactis, and Medicago* (Williams et al 2014).	Moderate- Food plant and associated genera are present within the general area of the Project site. Nearest record is 8 miles south of the Project site (CNDDB, 2023).
Danaus plexippus Monarch butterfly – California overwintering population	FCE/-/-	Overwintering population. Closed-cone coniferous forests along the coast from northern Mendocino to Baja California, Mexico. Roost in wind-protected trees groves of Eucalyptus, Cypress, and Monterey pine, with water and nectar nearby. Require flowering plants for adult food source and milkweed (*Asclepias* spp.) plants for egg laying and larva food source.	Low-Project area is outside of winter range. Species could potentially migrate near the Project area. No milkweed is present within the Project site. None have been observed within the Project area.
Euproserpinus euterpe Kern primrose sphinx moth	FT/-/-	Occurs only in association with its host plant, elderberry (*Sambucus* spp.) in which they lay their eggs on.	Absent – Outside of known range (USFSW, 2019).
Amphibians			
Ambystoma californiense California tiger salamander- central California DPS	FT/ST/WL	Require underground refuges, especially ground squirrel burrows as upland habitat for aestivation and vernal pools or other season water sources for breeding.	Absent – Project site is east of the Central Valley range (border of San Luis Obispo and western Kern County). No aquatic habitat present.

Table 4-2. Threatened, endangered, and/or sensitive wildlife species with the potential to occur within or near the Project area.

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Rana draytonii California red-legged frog	FT/-/SSC	Occurs in or near quiet permanent water of streams, marshes, ponds, lakes and other quiet bodes of water. In summer, frogs estivate in small mammal burrows, leaf litter, or other moist sites in or near (within a few hundred feet of) riparian areas.	Absent – Project site is outside of the geographic range for this species. No aquatic habitat present.
Spea hammondii Western spadefoot	-/-/SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands; vernal pools are essential for breeding and egg-laying.	Low – Grassland habitat is present with the Project area. Project area lacks vernal pools. Intermittent aquatic habitat could be present in the general area (Carneros Creek and other unnamed creeks). The closest record of this species is approximately 5.4 miles north of the Project from 2011 (CNDDB 2023). None have been observed within the Project area.
Reptile			
Anniella alexanderae Temblor legless lizard	-/SCE/SSC	East of the Temblor Mountain Range in western Kern County and western Fresno County. They require loose soil, sand or leaf litter, within a variety of open habitats. They prefer soils with a high moisture content. Typically found in alkali desert scrub habitat (Center for Biological Diversity, 2021)	Low – Project site is within the known range of the species. Potential habitat is present, however preferred habitat (alkali desert scrub) is not present within the Project area but is found in the general area. Several ephemeral drainages run near the Project area. Loamy soil may be present within the Project area. Nearest record is 10 miles west of the Project site (CNDDB 2023).
Anniella grinelli Bakersfield legless lizard	-/-/SSC	Found in the southern San Joaquin Valley; in the east side of the Carrizo Plain and within Bakersfield city limits. They occur in sparsely vegetated areas with moist, loose soil. Use leaf litter, rocks and logs for refuge.	Absent- Project site is outside of known range of this species.
Arizona elegans occidentalis California glossy snake	-/-/SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. Generalists reported from a range of scrub and grassland habitats, often with loose or sandy soils.	Moderate – Potential habitat is present. Nearest record is 11 miles north of the Project site from 2014 (CNDDB, 2023). None were observed on the Project site.

Table 4-2. Threatened, endangered, and/or sensitive wildlife species with the potential to occur within or near the Project area.

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Emys marmorata northwestern pond turtle	-/-/SSC	Require aquatic habitats such as ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation below 6000 ft elevation. Require sites for basking and sandy banks or open grassy fields as upland habitat for egg-laying (up to .5 km from water).	Absent- Aquatic habitat is not present within the Project site.
Gambelia sila Blunt-nosed leopard lizard	FE/SE/FP	Chenopod scrub; resident of sparsely vegetated alkali and desert scrub habitats in areas of low relief; seeks cover in mammal burrows, under shrubs or structures such as fence posts.	Moderate – Potential habitat is present; however, BNLL protocol-level surveys were conducted in 2023 and resulted in negative findings. BNLL are known to occur within 3 miles of the Project site.
Masticophis flagellum ruddocki San Joaquin coachwhip	-/-/SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Requires mammal burrows for refuge and oviposition sites.	Moderate – Habitat present in and around the Project area.
Phrynosoma blainvillii Coast horned lizard	-/-/SSC	Found in a wide variety of habitats such as alkali desert scrub, grassland blue oak woodland, but most common in lowlands along sandy washes with scattered low bushes. Require ant hills (specialized ant diet) with logs or rocks for basking and cover (Laudenslayer & Parisis, 2007).	Absent– Grassland habitat present. Specific habitat requirements are not present. The nearest record is 9.4 miles southwest of the Project area.
Bird			
Agelaius tricolor Tricolored blackbird	-/ST/BLM S, SSC, RWL, BCC, MBTA	Highly colonial species. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony. Forages in agricultural fields and grassland habitat.	Absent – Foraging grassland habitat present; however, no suitable nesting habitat is present. No suitable water sources are present in or near the Project area. The nearest CNDDB record is 4.5 miles northeast of the Project (CNDDB 2023).
Aquila chrysaetos Golden eagle	-/-/FP, BE&GEPA, CMBPA	Rolling foothills, mountain areas, sage-juniper flats, and desert. Nests in large trees in open areas or canyons.	Low –Foraging habitat present, but no nesting habitat within the Project area.

Table 4-2. Threatened, endangered, and/or sensitive wildlife species with the potential to occur within or near the Project area.

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Athene cunicularia Burrowing owl	-/-/BLM, SSC, CMBPA	Found in a variety of habitats. Open dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation in areas where fossorial mammals are already present.	High – Suitable habitat present. The nearest record is 10 miles north of the Project site (CNDDB 2023).
Buteo swainsoni Swainson's hawk	-/ST/ CMBPA	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Moderate – Foraging habitat present; however, no nesting habitat was observed.
Charadrius montanus Mountain plover	-/-/SSC	Prefers short vegetation with bare ground and flat topography, prefers grazed areas with burrowing rodents in grasslands, plowed fields, grain fields and sod farms.	Moderate – Project is within wintering range and preferred habitat is present. The nearest record is approximately 10 miles north of the Project site.
Charadrius nivosus nivosus Western snowy plover	FT/-/SSC	Needs gravelly, sandy or friable soils for nesting on sandy beaches, salt pond levees and shores of large alkali lakes.	Absent – Habitat is not present within the Project site.
Empidonax traillii extimus Southwestern willow flycatcher	FE/SE/-	Riparian woodlands in southern California.	Absent – Habitat is not present within the Project site.
Falco mexicanus Prairie falcon	-/-/WL	Dry, open habitats. Nests on cliffs. Forages far from breeding sites, even to marshlands and ocean shores.	Absent – Habitat is not present within the Project site.
Gymnogyps californianus California condor	FE/SE/ FP, CMBPA	Requires large areas of remote country for foraging, roosting, and nesting. Roosts on large trees or snags or on isolated rocky outcrops and cliffs. Forages in open grasslands and oak savanna foothills.	Low – Foraging habitat is present. Nesting habitat is not present within the Project site. Project area is not in Critical Habitat for the species.
Haliaeetus leucocephalus Bald eagle	-/-/FP, BE&GEPA, CMBPA	Requires large area with good food base, perching areas and nesting sites. Typically found nesting near rivers, lakes, and marshes. May be found foraging in dry areas such as farmland and urban habitat.	Absent – No habitat present.

Table 4-2. Threatened, endangered, and/or sensitive wildlife species with the potential to occur within or near the Project area.

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Toxostoma lecontei Le Conte's thrasher	-/-/SSC	Desert wash and desert scrub; commonly nests in dense spiny shrub or densely branched cactus in desert wash.	Absent – Scrub habitat not Present with the Project site.
Mammal			
Ammospermophilus nelsoni San Joaquin (Nelson's) antelope squirrel	-/ST/-	Western San Joaquin Valley from 200-1200 feet elevation. On dry, sparsely vegetated loam soils, dig burrows or use kangaroo rat burrows; need widely scattered shrubs, forbs, and grasses in broken terrain with gullies and washes.	High – Species has been observed within the general area. Habitat is present within the Project area.
Antrozous pallidus Pallid bat	-/-/SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts need to be protected from high temperatures and are very sensitive to disturbance.	Low – Grassland habitat for foraging is present. Roosts sites are not present within Project site, however, there is a nearby record approximately 2 miles southwest of the Project in a rocky area (CNDDB, 2023).
Dipodomys ingens Giant kangaroo rat	FE/SE/-	Grassland habitat on the western side of the San Joaquin Valley, marginal habitat in alkali scrub. Need level terrain and sandy loam soils for burrowing.	Low – Grassland habitat is present, and Project is within species range. No burrow precincts or other evidence of species presence (caches, cleared plant litter around burrows) were observed at the site.
Dipodomys nitratoides nitratoides Short-nosed kangaroo rat	-/-/SSC	Western side of San Joaquin valley in grassland and desert scrub (especially *Atriplex*) habitat. Friable soils, flat to gently sloping areas.	Moderate – Grassland habitat is present within the Project site. Nearest record is approximately 10 miles east of the Project site (CNDDB, 2023).
Dipodomys nitratoides nitratoides Tipton kangaroo rat	FE/SE/-	Saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley.	Absent – No scrub habitat is present within the Project site.
Eumops perotis californicus Western mastiff bat	-/-/SSC, WBWG:H	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, etc.; roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Low – No suitable roosting habitat present.

Table 4-2. Threatened, endangered, and/or sensitive wildlife species with the potential to occur within or near the Project area.

Species	Federal Status/State Status/Other Status	Habitat	Probability of Occurrence
Sorex ornatus relictus Buena Vista Lake ornate shrew	FE/-/SSC	Marshlands and riparian areas in the Tulare Basin. Prefer moist soil and use stumps, logs and litter for cover.	Absent – Habitat is not present within the Project site. The Project area is outside of the designated Critical Habitat for this species.
Taxidea taxus American badger	-/-/SSC	Found in many habitats. Most abundant in drier open stages of most shrubs, forest, and herbaceous habitats. Needs sufficient food and open areas. Preys on burrowing rodents and digs burrows.	Moderate – Suitable habitat is present within the Project site. The nearest record is approximately 14 miles south of the Project site (CNDDB, 2023).
Vulpes macrotis mutica San Joaquin kit fox	FE/ST/-	Chenopod scrub and valley and foothill grassland; annual grasslands or grassy open stages with scattered shrubby vegetation.	High – Habitat is present within the Project site. There have been multiple records in the general area (CNDDB, 2023).

Federal Status/State Status/Other Status Codes:

BE&GEPA = Bald Eagle and Golden Eagle Protection Act

CMBPA = California Migratory Bird Protection Act

CNDDB = California Natural Diversity Database Info (CDFW)

FE = Federally listed Endangered (USFWS)

FP = Fully protected under Fish and Game Code (CDFW)

FT = Federally listed Threatened (USFWS)

FCE = Federally Candidate Endangered (USFWS)

SE = State-listed Endangered (CDFW)

ST = State-listed Threatened (CDFW

SCE = State Candidate Endangered (CDFW)

SSC= Species of Special Concern (CDFW)

WL = State Watch List (CDFW)

WBWG = Western Bat Working Group

H = Highest priority

4.2 CRITICAL HABITAT

A review of the USFWS Critical Habitat Report search determined that no critical habitat occurs within or near the Project site. Species with designated Critical Habitat included in the desktop analysis include Buena Vista Lake ornate shrew, California condor, southwestern willow flycatcher, western snowy plover, California red-legged frog, California tiger salamander, Kern primrose sphinx moth (proposed), and vernal pool fairy shrimp. Of these species, the California condor has the potential to use the Project area for foraging habitat. The Project is outside of Critical Habitat for the California condor.

4.3 SPECIES ACCOUNTS

Results of the CNDDB, IPaC, and CNPS quad query indicated that 33 plants that are either state listed, federally listed and/or have CNPS rare plant ranks have the potential to occur within the Project site (see Table 4-1). Twelve plants in Table 4-1 were determined to have a potential of occurrence between high, moderate, and low levels within the Project. Twenty-one plants such as California androsace, Lost Hills crownscale, Carrizo Plain crownscale, white pygmy-poppy, Kern Canyon clarkia, protruding buckwheat, Temblor buckwheat, spiny-sepaled button-celery, San Benito poppy, Tejon poppy, diamond-petaled California poppy, stinkbells, alkali-sink goldfields, Ferris's goldfields, Coulter's goldfields, pale-yellow layia, Munz's tidy tips, Jared's pepper grass, showy golden madia, California alkali grass, and oil neststraw were deemed absent or unlikely to occur within the Project. These species are unlikely to occur due to lack of habitat, absence of preferred soil, or the Project site being outside their known geographic or elevation range and are not discussed further in this report. Plants that are designated under the CNPS Ranks 3 or 4 are on review and watch lists will also not be discussed further in this report.

Results of the CNDDB and USFWS IPaC searches indicated that 34 species of wildlife with various special-status designations have the potential to occur within or surrounding the Project site (see Table 4-2). Of these 34 species, nine species have been ruled out as unlikely to occur due to the absence of suitable habitat or the Project site being outside of the known range for the species, which includes: vernal pool fairy shrimp, Kern primrose sphinx moth, California tiger salamander, Bakersfield legless lizard, northwestern pond turtle, western snowy plover, prairie falcon, bald eagle, tricolored blackbird, LeConte's thrasher, Tipton kangaroo rat, Buena Vista Lake ornate shrew. These species will not be discussed further in this report.

4.4 BIOLOGICAL SURVEYS

The Project well sites and vicinity potentially support sensitive fauna and flora known to occur in the region. Padre conducted botanical surveys and protocol-level blunt-nosed leopard lizard surveys in 2023 at the Project site. During the course of the surveys, no sensitive species were observed within the Project area. Very few small mammal burrows were observed within the Project area. No potential dens (San Joaquin kit fox, American badger) were observed during the surveys. Field surveys consisted of walking meandering transects within the Project site. The botanical survey report and BNLL survey report are included in **Appendix C and D**.

5.0 HABITAT DISTURBANCE AND IMPACTS

5.1 HABITAT DISTURBANCE

Project work is planned on existing habitat and will include ground disturbance activities, including vegetation removal and grading. Access to the Project site will occur by traveling on existing access roads directly adjacent to the Project site.

5.2 DIRECT AND INDIRECT IMPACTS TO THREATENED AND ENDANGERED SPECIES

5.2.1 Plant Species

Direct impacts to listed plant species include the loss of dormant seed banks that may be present in the soil, and loss of suitable topsoil and mycorrhizal fungi. The most common type of mycorrhizal fungi is arbuscular mycorrhizal fungi (AM) and although some plants do not need AM fungi to survive, others can be quite dependent on it for optimal growth rate, vigor, and longevity. In addition, native plants are known to be more mycotrophic (dependent on mycorrhiza) than weedy species (Chaudhary and Griswold, 2001). No sensitive or listed plant species have been observed within the Project area by Padre Associates. Botanical surveys were conducted during the growth season after a high rain year. Therefore, it was a highly productive year for vegetation and good conditions were present for plants to grow and bloom. No observations of listed or sensitive plant species were recorded within the Project area in the CNDDB query of the Project quad. With implementations of avoidance measures, direct impacts are anticipated to be less than significant to sensitive plant species.

Indirect impacts include the establishment of non-native "weedy" succession plant species at sites where vegetation has been removed and bare soils are present. However, several of these “weedy” plant species have become naturalized throughout the region, such as several non-native mustards and grass species, and are already dominant naturalized species known to occur throughout the area. Several of these plant species are listed on the California Invasive Plant Inventory (CIPI) with various ratings of invasiveness: limited, moderate, or high. *Bromus madritensis* ssp. *rubens* is considered invasive; however, it has become naturalized and has become part of the herbaceous understory of habitats such as Allscale Scrub. This species and the other invasive species do well in disturbed areas. *B. madritensis* and *B. diandrus* are both fire promoters. However, with implementations of avoidance measures, indirect impacts are anticipated to be less than significant to sensitive plant species.

5.2.2 Wildlife Species

Direct impacts to wildlife species include mortality from vehicle strikes, harassment due to increased levels of human disturbance during Project activities, crushing of collapsed burrows and dens if present, and temporary loss of habitat during vegetation removal activities. Nesting birds may be disturbed if present within the vegetation to be removed.

Through the use of proper minimization and avoidance measures listed in Section 7.0 of this report, these direct impacts will be significantly reduced and/or eliminated completely. In addition, the use of a qualified biologist(s) onsite during initial vegetation removal and ground disturbance activities can ensure that these measures are being employed and that any new and

unforeseen impacts can be addressed and avoided. The implementation of avoidance measures is anticipated to result in less than significant direct impacts to sensitive wildlife species.

Indirect impacts on wildlife species upon completion of the vegetation removal include increased predation due to the loss of vegetation and burrows/dens for escape during foraging activities. Vegetation removal may also be a loss of food sources for some species. The implementation of avoidance measures is anticipated to result in less than significant indirect impacts on sensitive wildlife species.

5.2.3 Cumulative Impacts

Vegetation removal may likely have some short-term impacts; however, the removal of non-native grasses and forbs could benefit the local ecosystem. The Project footprint is anticipated to be approximately 2.1 acres of habitat in an area with vast surrounding habitat. Therefore, other undisturbed habitat will remain in the area, and the planned Project activities are not anticipated to result in any significant cumulative impacts.

6.0 DETERMINATION EFFECTS TO LISTED SPECIES

6.1 LISTED PLANT SPECIES

California jewelflower, Kern mallow and San Joaquin woollythreads are the only federal and/or state-listed plant species with the potential to occur within the Project site. Below is a determination effect for each plant species.

6.1.1 California Jewelflower (*Caulanthus californicus*)

California jewelflower is known to occur in chenopod scrub, pinyon-juniper woodlands, and valley-foothill grasslands with sandy soils (CNPS, 2023). Previous sightings of California jewelflower indicated that the herbaceous cover is usually dense (USFWS, 1998). California jewelflower was not observed within the Project area or the survey buffer. The Project site is in an area that is regularly grazed by cattle. Over-grazing and heavy grazing contribute to the presence of bare soil which allows invasive species to colonize an area (Buck-Diaz et al, 2011). A known threat that has contributed to the decline of California jewelflower is competition with non-native grasses (CDFW, 2023). Therefore, due to the extensive grazing of the Project area and surroundings, California jewelflower could possibly have been extirpated from the area if a population was ever present. The Project site is not within a quad where the species is presumed to be extant (CNPS, 2023). California jewelflower has a low potential of occurrence within the Project Site due to the negative findings during botanical surveys and level of disturbance via cattle grazing. Therefore, the Project is expected to have a less than significant to no effect on California jewelflower.

6.1.2 San Joaquin Woollythreads (*Monolopia congdonii*)

San Joaquin woollythreads is an annual herb from the family Asteraceae and occurs in chenopod scrub and valley and foothill grasslands (CNPS, 2023). San Joaquin woollythreads occurs on sandy, sandy loam, or silty soils with neutral to subalkaline pH that were deposited in geologic times by flowing water. Occurrences have been reported at elevations ranging from approximately 60 to 800 meters (197 to 2625 feet; ESRP, 2023). This species was not observed during botanical surveys of the Project site or buffer. A known population was observed in bloom in 2023 by Padre, approximately 2.6 miles north of the Project site. The known population is in a similar habitat type as the Project site. San Joaquin woollythreads typically prefer open areas with sandy soils. According to the USDA Web Soil Survey, the Project location does not contain the preferred sandy soil. With the soil makeup, the negative findings during the botanical surveys and the level of disturbance via cattle grazing, there is a low potential of occurrence for San Joaquin woollythreads within the Project site. Therefore, the Project is expected to have a less than significant to no effect on San Joaquin woollythreads.

6.1.3 Kern Mallow (*Eremalche parryi* ssp. *kernensis*)

Kern mallow has been reported from elevations ranging from approximately 240 to 1524 meters (720 to 4,572 feet), from alkaline to non-alkaline soils. The plant is commonly found under and among *Atriplex spinifera* (spiny saltbush) and *Atriplex polycarpa* (allscale saltbush), and at higher elevations is found in gravelly and shale type soils under and among *Juniperus californicus* (California juniper) (USFWS, 2013). While there is potential habitat for Kern mallow within the Project area, it was not observed during botanical surveys conducted at the Project site or within

the buffer. The nearest record from CNDDB is 8 miles southeast of the Project from 1986. The Project site is not within a quad where the species is presumed to be extant (CNPS, 2023). With the negative survey findings and level of disturbance due to cattle grazing, there is a low potential of occurrence of Kern mallow within the Project site. Therefore, Project activities are expected to have a less than significant to no effect on Kern mallow.

6.2 SENSITIVE PLANT SPECIES

Other sensitive plant species, plant species not listed under the ESA/CESA, with the potential to occur within the Project site are discussed below. Additionally, species profiles have been included in Appendix A.

6.2.1 Recurved larkspur (*Delphinium recurvatum*)

The recurved larkspur typically occurs in alkaline soils within chenopod scrub, cismontane woodland, and valley and foothill grassland at elevations below 790 meters (2,607 feet; CNPS 2023). Recurved larkspur was not detected during botanical surveys of the Project area. As none have been detected during surveys, it is unlikely the plant occurs in high concentrations within the Project area; therefore, Project impacts are not expected to occur to recurved larkspur.

6.2.2 Lemmon's jewelflower (*Caulanthus lemmonii*)

Lemmon's jewelflower is known to occur in pinyon-juniper woodland and valley and foothill grassland within elevations between 264 to 5,214 feet (80 and 1,580 meters; CNPS, 2023). The Project Site has potential habitat for this species in valley and foothill grasslands, however none were detected during botanical or biological surveys of the Project Site. As none were detected during surveys, it is unlikely the plant occurs in high concentrations within the Project area; therefore, Project impacts are not expected to occur to Lemmon's jewelflower.

6.3 LISTED WILDLIFE SPECIES

Blunt-nosed leopard lizard, San Joaquin antelope squirrel, San Joaquin kit fox, Swainson's hawk, California condor, giant kangaroo rat, Temblor legless lizard (state candidate), Crotch's bumblebee (state candidate), and monarch butterfly (federal candidate) are the federally and/or state listed species with the potential to occur within the Project site. Below is a determination effect for each wildlife species.

6.3.1 Blunt-nosed Leopard Lizard (*Gambelia sila*)

This species of lizard was historically located in the San Joaquin Valley inhabiting non-native grassland and alkali sink scrub communities, characterized by poorly drained, alkaline, and saline soils (ESRP, 2023). Blunt-nosed leopard lizard (BNLL) protocol-level surveys were conducted for the Project by Padre in 2023 and resulted in negative findings. However, BNLL are known to occur in the general area and have been observed by Padre at various locations within 3 miles of Project site. The 2023 BNLL Survey Report is included as Appendix D. Implementation of avoidance measures would result in impacts being less than significant to BNLL.

6.3.2 San Joaquin antelope squirrel (*Ammospermophilus nelsoni*)

San Joaquin antelope squirrel (SJAS) is known to occur throughout various areas within western Kern County. Suitable habitat is present within the Project area, however, very few small

mammal burrows were observed within the Project site and survey buffer. This does not mean that SJAS cannot move into the Project area, however it may indicate that they are not currently present. SJAS have been observed by Padre on dirt and gravel roads on the way to the Project (within 1-3 miles) and at a nearby Project in similar habitat (approximately 2.5 miles north). With the implementation of minimization and avoidance measures, Project impacts are expected to be less than significant to SJAS.

6.3.3 San Joaquin Kit Fox (*Vulpes macrotis mutica*)

The San Joaquin kit fox (SJKF) is adapted to arid habitats such as the alkali scrub and arid grasslands throughout the San Joaquin Valley floor and into the surrounding foothills and adjoining valleys of the interior Coast Ranges (USFWS, 2010). No direct observations of SJKF occurred during surveys conducted at the Project location. No potential dens were observed within the Project area or survey buffer. The Project does occur within known SJKF population areas and SJKF could traverse throughout the Project area at any time. However, with the implementation of the minimization and avoidance measures, the Project impacts are anticipated to be less than significant to SJKF.

6.3.4 Swainson's Hawk (*Buteo swainsoni*)

The natural foraging habitat for the Swainson's hawk is open areas of grassland with sparse shrubs. They will also forage in agriculture fields of various crops. No Swainson's hawks were observed during surveys conducted at the Project location. The nearest CNDDB record of Swainson's hawk is approximately eleven miles northeast of Project area. No nesting habitat occurs within the Project site. Although no direct observations of Swainson's hawk have occurred during biological surveys, the species may traverse though the area to forage. With the implementation of the minimization and avoidance measures, the Project activities are not anticipated to adversely affect this species.

6.3.5 California condor (*Gymnogyps californianus*)

California condors require cavities in cliffs for nesting sites (USFWS, 1996). Foraging habitat includes grasslands, oak savannahs, and chaparral. Roosting may occur in large trees, rocky outcrops, or cliff cavities (USFWS, 1996). Nesting and roosting habitat are not present within the Project site. No condors were observed during various surveys of the Project site and buffer. Although no direct observation of California condors has occurred during biological surveys, the species may traverse the site at any time. However, with the implementation of minimization and avoidance measures, Project impacts are expected to be less than significant to California condors.

6.3.6 Giant kangaroo rat (*Dipodomys ingens*)

Giant kangaroo rats (GKR) are found in grassland habitats along the western edge of the San Joaquin Valley (from Fresno to Kern counties) and in the Carrizo Plan and Cuyama Valley in San Luis Obispo County (USFWS, 2023). GKR dig distinct burrow precincts that may have multiple openings. They typically also dig a vertical burrow without a dirt apron that acts as a seed cache. The Project site is outside of the six geographic units in which GKR are confirmed to still occur (USFWS, 2023); however, it is within the overall range of the species. No GKR were observed during surveys at the Project site. No burrows or seed caches characteristic of GKR

were observed within or surrounding the Project site. With the implementation of minimization and avoidance measures, the Project activities are not anticipated to adversely affect this species.

6.3.7 Temblor legless lizard (*Anniella alexanderae*)

The Temblor legless lizard (TLL) is a candidate species for listing as Endangered under the California Endangered Species Act (CESA). The species uses ground surface, loam and/or silty soil, leaf litter, and debris for feeding and cover (CDFW, 2022). The TLL is known to occur in alkali desert scrub and annual grasslands east of the Temblor Mountain Range (CDFFW, 2022). The species is known to occur at elevations ranging from 168 to 466 meters (551 to 1,529 feet) (CDFW, 2022). Temblor legless lizards were not observed during surveys at the Project site. There is some research that may suggest grasses and forbs are non-optimal habitat for legless lizards, and shrubs are preferred (Kuhnz et al, 2005). Plants such as matchweed and alkali goldenbush within the Project Area, may present a similar cover, or play a similar role as shrubs; however, there is a very low density of shrub like plants in the Project area. Additionally, the top 16 inches of soil within the Project Area is categorized as clay loam (USDA, 2023). The clay content in the soil may be too compact for legless lizards to burrow in. With the absence of sandy soils and scrub habitat, the Project Site represents poor quality habitat for Temblor legless lizard. Since the Project site is within the range for Temblor legless lizards and they are an elusive species for which little is known, additional surveys and measures may be recommended by agencies (i.e. CalGEM, CDFW). With the implementation of recommendations and minimization and avoidance measures, the Project activities are anticipated to be less than significant to TLL.

6.3.8 Crotch's bumblebee (*Bombus crotchii*)

Crotch's bumblebee is a candidate species for listing as Endangered under the California Endangered Species Act (CESA). This species is nearly endemic to California with a historic range that includes the southern California coast, coast range, central valley, and adjacent foothills (The Xerces Society, 2018). It requires floral resources, underground nests, and overwintering habitat in open grassland and scrub communities. This species is a generalist forager and visits a wide variety of flowering plants during flight season, which is February to October. Crotch's bumblebee were not observed during surveys at the Project site, however potential habitat is present within the general area. As the species has not been observed during multiple visits throughout the flight season, it is unlikely that the species occurs in high numbers at the Project site. With the implementation of avoidance and minimization measures, Project impacts are anticipated to be less than significant for this species.

6.3.9 Monarch butterfly (*Danaus plexippus*)

The monarch butterfly is a candidate species for federal listing under Endangered Species Act (ESA). The species of butterfly lives in diverse habitats including meadows, fields, gardens, and open woodlands. No monarch butterflies were observed during surveys at the Project site, however with migration happening in the fall season, the species may be seen within the Project area at any time. The monarch's host plant, milkweed (*Asclepias*), was not observed during surveys within the Project area. With the implementation of avoidance and minimization measures, Project impacts are anticipated to be less than significant for this species.

6.4 SENSITIVE WILDLIFE SPECIES

Sensitive wildlife species with the potential to occur within the Project site are discussed below including a determination effect for each sensitive wildlife species.

6.4.1 Burrowing Owl (*Athene cunicularia*)

The western subspecies of burrowing owl is found west of the Great Plains from Canada to Mexico (ESRP, 2023). Suitable habitat, grassland, is present within the Project area. However, no suitable burrow refugia for burrowing owl were observed within the Project site. Burrowing owls were not observed during any of the surveys of the Project area or buffer. The nearest CNDDB record is 10 miles from the Project stie. With the implementation of the minimization and avoidance measures, Project impacts are anticipated to be less than significant for burrowing owls.

6.4.2 Western spadefoot (*Spea hammondii*)

Western spadefoot toads primarily occur in grasslands and occasionally valley foothill woodlands. Grasslands with vernal pools are optimal habitat for the species (CDFW, 2000). Western spadefoot toads remain dormant in burrows for up to nine months of the year, especially during a long dry-season. The spadefoot toad requires an upland habitat, for feeding and constructing burrows (or utilizing mammal burrows) and a wetland habitat, for breeding. Western spadefoot toads were not observed during any of the surveys of the Project area or buffer. Optimal habitat (vernal pools) is not present within the Project site. Few small mammal burrows for refuge were observed within the Project area and buffer. Intermittent drainages are present in the general area surrounding the Project. Therefore, the western spadefoot toad could traverse throughout the Project area or use it for foraging habitat. However, with the implementation of the minimization and avoidance measures, the Project impacts are anticipated to be less than significant for this species.

6.4.3 California glossy snake (*Arizona elegans occidentalis*)

The California glossy snake (*Arizona elegans occidentalis*) is a non-venomous species found primarily in arid and semi-arid regions of the southwestern United States. It is known as a California Species of Special Concern. It inhabits various habitats, including desert scrub, grasslands, rocky slopes, and sandy areas. No California glossy snakes were observed during surveys within the Project area or buffer. Implementation of avoidance measures would result in impacts being less than significant to no effect to the California glossy snake.

6.4.4 American Badger (*Taxidea taxus*)

The American badger is a California Species of Special Concern, which typically inhabits areas without trees, including grasslands, farmland, and scrublands, with friable soils (Williams, 1986 and Sullivan, 1996). Badgers dig elliptical shaped burrows with 8-to-12-inch openings, which they utilize for cover, sleeping, hunting, caching food and breeding (Williams, 1986). No American badgers or badger dens were observed during the various surveys of the Project area and buffer. Project impacts are expected to be less than significant to American badger with the implementation of minimization and avoidance measures.

6.4.5 Western mastiff bat (*Eumops perotis*)

The western mastiff bat is a year-round resident in California occurring from San Diego County to the Oregon border at low to mid-elevations along the west side of the Sierra Nevada range (Zeiner et al,1990). Individuals have been known to travel > 15 miles to feeding grounds (Vaughan, 1959). Feeding occurs most frequently over desert washes, grasslands, or meadows, but also feed above forest canopy. The species requires rock crevices, buildings, trees, or tunnels for roosting (Zeiner et al, 1990). No roosting habitat occurs within the Project site. Although no direct observations of western mastiff bat have occurred during biological surveys, the species may traverse though the area to forage. With the implementation of the minimization and avoidance measures, the Project activities are anticipated to be less than significant for this species.

6.4.6 San Joaquin Coachwhip (*Masticophis flagellum ruddocki*)

The San Joaquin coachwhip is typically found in valley grassland and saltbush scrub habitats and prefer areas with little to no tree cover (Thomson et al, 2016). No San Joaquin coachwhips have been observed during any of the surveys of the Project area or buffer. With the implementation of the minimization and avoidance measures, Project impacts are anticipated to be less than significant for San Joaquin coachwhip.

6.4.7 Short-nosed Kangaroo Rat (*Dipodomys nitratoides brevinasus*)

Short-nosed kangaroo rats utilize flat and gently sloping terrain (USFWS, 1998). They are often found in grasslands with scattered shrubs and desert shrublands with friable soils for burrow excavation. Burrow complexes typically have multiple entrances to evade predators. Suitable habitat for the species is present within the grassland habitat at the Project. However, very few small mammal burrows were observed within the Project area and buffer. No short-nosed kangaroo rats were observed during surveys at the Project. Project impacts are expected to be less than significant to short-nosed kangaroo rat with the implementation of minimization and avoidance measures.

6.4.8 Pallid bat (*Antrozous pallidus*)

Pallid bats are most commonly found in open, dry habitats with rocky areas for roosting and may be found throughout the state of California (Zeiner et al, 1990). Roosting habitat is not present within the Project area. However, the nearest CNDDB record of the species is approximately 2 miles southeast of the Project site in a rocky area. Therefore, the species may utilize the Project area for foraging habitat. Project impacts are anticipated to be less than significant for the species with the implementation of avoidance and minimization measures.

6.4.9 Golden eagle (*Aquila chrysaetos*)

This eagle is generally found in open mountains, foothills, plains and open country. No golden eagles were observed during surveys conducted at the Project location. There are no current CNDDB records of the species in the general area. No nesting habitat occurs within the Project site. Although no direct observations of golden eagle have occurred during biological surveys, the species may traverse though the area to forage. With the implementation of the minimization and avoidance measures, the Project activities are not anticipated to adversely affect this species.

7.0 MINIMIZATION AND AVOIDANCE MEASURES

This Section presents the proposed avoidance and minimization measures for listed species potentially occurring in the Project area. The following avoidance and minimization measures are proposed to avoid and minimize temporary disturbance of special-status species and degradation of the habitats used by these species:

MM BIO-1: Biological Pre-activity Surveys and Biological Monitoring. A pre-disturbance biological survey will be conducted by a Qualified Biologist. A Qualified Biologist is defined as a person with a combination of academic qualifications (minimum of 4 years of university or college education in biological sciences, zoology, wildlife biology, ecology, botany, or environmental science), professional field experience conducting biological surveys, and demonstrated knowledge and skills (i.e., field experience) related to the species and habitats present on the project activity site and the specific focused or protocol-level surveys conducted. The purpose of the pre-disturbance surveys is to confirm the potential presence and/or absence of any protected status species listed as threatened or endangered under the federal Endangered Species Act, threatened or endangered under the California Endangered Species Act, or designated as fully-protected in the California Fish and Game Code, and to confirm the presence and/or absence of any non-protected status sensitive species considered under California Environmental Quality Act.

The pre-disturbance biological survey will consist of walking belt transects to accomplish 100% coverage of the project site plus a 250-foot buffer. All direct and indirect observations of special-status biological resources will be recorded using a handheld GPS and on field forms. Habitat will be evaluated by the Qualified Biologist to determine the potential for biological resource monitoring and/or surveys for species that are seasonal or require focused surveys during specified periods (e.g., special-status plants, blunt-nosed leopard lizard).

The pre-disturbance biological survey report will include a map of the proposed project construction boundary, biological survey area, special-status species observations (when observed), areas of potential and/or occupied habitat (if any), areas identified for avoidance, and a list of all applicable mitigation measures that will be implemented for the respective project activity site.

MM BIO-2: Nesting Bird Preconstruction Surveys. A pre-disturbance active bird nest survey will be conducted by a Qualified Biologist no more than 10 days prior to the start of any ground disturbance that will take place during the bird nesting season (February 1 through August 31). Surveys will follow USFWS and CDFW guidance and/or protocols, as applicable. If ground-disturbing activities were initiated prior to, and continue into, the nesting season without a break in activity of more than 1 week, no nesting bird survey is necessary. If no active nests or nesting birds are identified during the pre-disturbance survey, then ground-disturbing activities may proceed, and no further mitigation measures will be required for nesting birds.

If active nests are identified, the following measure will be included as part of the pre-disturbance active bird nest survey report.

Active bird nest(s) will be avoided by establishing a minimum 250-foot non-disturbance buffer for passerine species, a minimum 500-foot buffer for non-listed raptor nest(s), or a minimum 0.5-mile buffer around any federal or state-listed raptor nest(s) until the breeding season has

ended. Non-disturbance buffers can be removed when a Qualified Biologist has determined that the birds have fledged, are no longer reliant on the nest or parental care for survival and adult birds are no longer occupying the nest, or the nest is no longer active (e.g., failed). Reduced non-disturbance buffers may be implemented if a Qualified Biologist concludes that work within the buffer area will not be likely to cause disturbance to or abandonment of the nest (e.g., when the disturbance area is concealed from a nest site by topography, when work activities will have a limited duration within the buffer area, or when the species has been known to tolerate higher levels of disturbance). If reduced non-disturbance buffers are implemented, a Qualified Biologist will monitor the active nest(s) before and during construction to establish a baseline for nest behavior and determine whether construction activities are adversely affecting the nest. The pre-disturbance monitoring of the nest site will occur on at least two occasions of at least one hour each during anticipated work hours prior to construction to establish a behavioral baseline. If behavioral changes are observed, the work causing that change will cease within the buffer area until the nest has fledged or is determined by the Qualified Biologist to no longer be active. The Qualified Biologist shall have the authority to halt or redirect construction activities to protect nesting birds from project activities. Any reduction of buffer areas for State or federal listed species during the nesting season must be authorized by CDFW and/or USFWS.

MM BIO-3: Worker Environmental Awareness Project. A Worker Environmental Awareness Project (WEAP) will be presented to all personnel that may access the Project Site, prior to beginning work on the Project site. The WEAP training will be given by trained personnel (e.g., Qualified Biologist or assigned Company Environmental Specialists). WEAP trainings will cover an overview of the laws and regulations governing the protection of biological resources; a description of protected (i.e., ESA/CESA threatened, endangered, candidate, and other special status) species known to occur or with the potential to occur in the Project Area. The training should include a discussion of the sensitive and protected species and their biology and general behavior, distribution and habitat needs, sensitivity to human activities, and Project-specific protective measures. It will also discuss species status and legal protections, define what is habitat and disturbance, and present biological resource protection measures. Materials will be provided to assist workers in recognizing protected and sensitive species. The training will include avoidance and minimization measures to protect biological resources, the identification of environmentally sensitive areas and avoidance buffers, and how to report biological resources if observed on site. The training of personnel should be documented using sign-in sheets.

MM BIO-4: San Joaquin Kit Fox Avoidance. If the pre-disturbance biological survey identifies the presence of any potential, known or natal San Joaquin kit fox den, the following measures will be implemented and documented in the pre-disturbance survey report.

1. Potential kit fox dens will be clearly identified on project maps, marked in the field, and a 50-foot no work buffer will be demarcated using stakes and flagging or similar materials to prevent inadvertent damage to the potential den. Alternatively, if a potential den cannot feasibly be avoided at such distance, the den may be monitored and blocked or excavated in accordance with the Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to or during Ground Disturbance (USFWS, 2011). All potential dens that will be destroyed by a Project activity or ground disturbance will be fully excavated after monitoring conducted by a Qualified Biologist shows that it is not occupied by a listed or otherwise protected species.

2. If kit fox activity or sign is detected at any den including atypical dens (e.g., pipes, culverts), the den location will be identified as a "known" kit fox den in accordance with USFWS guidelines (USFWS, 2011). A minimum 100-foot no work buffer from any disturbance area will be maintained for known dens.

3. During pupping season (January 1 through August 31 or until pups are no longer dependent on adults), a minimum 500-foot no work buffer (distance at which construction noise attenuates to approximately 60 dBA) from any disturbance area will be maintained from occupied natal dens.

4. No excavation (or other project-related destruction) of a known or natal den will occur without prior written guidance from USFWS.

5. All pipes (greater than 3.5 inches in diameter) used during project activities should be capped. Stored pipes greater than 3.5 inches that cannot be visually inspected to verify that no wildlife are present will need to be monitored by a Qualified Biologist prior to use or movement. All trenches and excavations should be covered or ramped (1:1 slope) prior to prevent wildlife entrapment.

6. If take (as defined in FESA and/or CESA) of SJKF cannot be avoided, Bidr shall consult with USFWS and/or CDFW to obtain necessary authorization and shall implement all associated conditions, including any required take avoidance or minimization measures, of such authorization. If den exclusion or destruction is permitted under FESA, a Qualified Biologist will supervise any such activity.

MM BIO-5: San Joaquin Antelope Squirrel Avoidance. If the pre-disturbance biological survey identifies burrows within the Project site that are characteristic of or may be used by San Joaquin antelope squirrel (SJAS), the following avoidance methods for SJAS should be implemented:

1. Pre-activity surveys for SJAS will occur prior to the start of ground disturbance using 10-30 meter spacing.
2. SJAS Surveys will be conducted when temperatures range from 50-90˚F. If sunny conditions are not present, surveys should not be conducted if temperatures are below 60 degrees Fahrenheit.
3. Surveyors will scan the survey areas with binoculars and listen for vocalizations. Visual and audible observations will be recorded and mapped.
4. All active SJAS burrows shall clearly be marked with flagging or staking, and ground-disturbing activities shall observe a minimum 50-foot no work buffer from each active burrow.
5. In areas where SJAS have been observed, suspected to occur, or observed within 50 feet, three days of SJAS surveys during the appropriate temperatures are recommended, prior to the start of ground disturbance activities.
6. Vegetation clearing will be completed after three days of no SJAS observations.
7. All holes, trenches, and other openings with a one-inch or greater in diameter must be covered during the day unless workers are in the immediate area working. If

covering holes is not feasible while workers are taking required breaks, then the monitoring biologist will walk the area to discourage SJAS from entering the work area until workers return. All holes must be covered overnight.

MM BIO-6: Blunt-nosed Leopard Lizard Avoidance. BNLL protocol-level surveys were conducted for the Project Location in 2023 and resulted in negative findings. The Well Site within the Project Location was fenced using exclusion fencing to exclude BNLL from moving into the area. If the integrity of the exclusion fence is not maintained (free of holes, gaps, burrowing under fencing material, etc.), then Padre recommends additional BNLL surveys, if work has not begun by September 29, 2024. Since the Project Location is within known BNLL habitat, the following measures are recommended:

1. Project employees and contractors will receive formal training prior to working at the Project Site including attending a sensitive species education program developed by trained biologists, focusing on BNLL and any other sensitive species that may occur in the Project areas. At a minimum, the program will cover species distribution, identification characteristics, sensitivity to human activities, legal protection, penalties for violation of state and federal laws, reporting requirements, and project mitigation measures. The training will also cover these avoidance recommendations:
2. Vehicles will observe a 10-mph speed limit within 2 miles of the nearest BNLL observation site. The speed limit will be imposed on all dirt and gravel roads leading to the Project Site to allow all Project personnel adequate reactionary time to stop their vehicle/equipment safely if a BNLL is observed on any of the access roads.
3. To prevent attracting wildlife to the Project areas, trash and food items will be kept in closed containers and removed daily. Trash and food items may attract BNLL predators, such as coyotes, foxes, and ravens. All trash and food items must be removed from the Project Site at the end of the workday and be kept in covered containers at all times.
4. A 360-degree inspection of all vehicles and equipment will be conducted prior to moving and operation to ensure that no BNLL or other wildlife is present beneath the tires, tracks, and/or undercarriage of vehicles/equipment. If a BNLL is observed beneath vehicles/equipment, the individual will be allowed to leave of its own accord and will not be harassed in any way.
5. Vehicles will use existing and/or designated roads and avoid any cross-country travel, outside of the exclusion fence. No vehicles or equipment may access overland routes until a biologist has cleared the route for travel and has confirmed no burrows are present.
6. To prevent entrapment of BNLL and other wildlife, any trenches or pits created during Project activities more than 2 feet deep will be either covered at night or earthen or wooden escape ramps will be provided. Before work continues in these areas, trenches and pits will be inspected by a biologist to ensure that no animals are present. Any open excavations shall be covered with appropriately sized plywood (or other similar cover types) with soil used to seal the edges. Any gaps or openings around

the edge of the plywood must be sealed with soil or another material to deter BNLL and other wildlife from entering the excavation.

7. Spills of hazardous materials will be immediately cleaned up to prevent exposure to BNLL and other wildlife.
8. All observations or suspected observations of BNLL and/or other wildlife will be reported to the biological monitor immediately. If any BNLL and/or other wildlife are observed within the Project Site, all work activities that may harm or injure an individual will be halted immediately, until the animal leaves of its own accord. Under no circumstance will an animal be harassed or chased from the Project Site.
9. An exclusion zone of 50-feet shall be established around all active burrows. No ground disturbance or use of heavy equipment/vehicles shall occur within this exclusion zone. An exclusion zone of 250-feet shall be established around all known BNLL burrows.

MM BIO-7: Giant Kangaroo Rat Avoidance. During the pre-construction biological survey, biologists should look for burrows that are characteristic of giant kangaroo rat. If any potential giant kangaroo rat burrows are observed, further measures should be taken to determine the presence of giant kangaroo rat within the Project Area. If giant kangaroo rat are determined to be present within the Project Area, CDFW and USFWS should be consulted to decide the next steps.

MM BIO-8: Burrowing Owl Avoidance. If the pre-disturbance survey identifies the presence of an occupied burrowing owl burrow, the following measures will be implemented and included in the pre-disturbance biological survey report:

1. Occupied burrowing owl burrows will not be disturbed during the burrowing owl nesting season (February 1 through August 31). The non-disturbance buffer distances shown in Table 4 below, in accordance with CDFW (2012), will be maintained between all disturbance areas and burrowing owl nesting sites.

Table 4. Recommended Non-Disturbance Buffers for Burrowing Owl Based on Project Activity Impact Level (CDFW, 2012).

Time of Year	Level of Disturbance		
	Low	Medium	High
April 1–Aug 15	656 feet (200 meters (m))	1,640 feet (500 m)	1,640 feet (500 meters)
Aug 16-Oct 15	656 feet (200 m)	656 feet (200 m)	1,640 feet (500 meters)
Oct 16-Mar 31	164 feet (50 m)	328 feet (100 m)	1,640 feet (500 meters)

2. If occupied burrow avoidance is infeasible during the non-breeding season (between September 1 and January 31), a Qualified Biologist shall implement a passive relocation Project in accordance with the CDFW (2012) Staff Report on Burrowing Owl Mitigation, which may include installing one-way doors in burrow entrances for 48 hours to ensure the owl(s) have left the burrow, daily monitoring during the passive relocation period, and subsequently collapsing evicted burrows, once unoccupied, to prevent re-occupation. Prior to passive relocation or exclusion efforts, a burrowing owl management plan will be prepared and approved by CDFW. Destruction of burrows will occur only pursuant to a CDFW-approved burrowing owl management plan; burrow excavation will be conducted by hand whenever possible.

3. As an alternative to passive relocation, occupied burrows that are identified within 500 feet but outside the area of ground disturbance may be buffered with hay bales, fencing (e.g., sheltering in place), or as directed by the Qualified Biologist in coordination with CDFW, to avoid disturbance of burrows.

MM BIO-9: American Badger Avoidance. If the pre-disturbance biological survey identifies the presence of an occupied American Badger burrow, the following measures should be implemented:

1. Occupied American badger dens (non-maternity dens) will be avoided by establishing a minimum 50-foot non-disturbance buffer.

2. Occupied maternity dens will be avoided by establishing a minimum 200-foot non-disturbance buffer during the pup-rearing season (February 15 through July 1).

3. A Qualified Biologist will establish (e.g., flag) non-disturbance buffer areas, as identified above, and will periodically monitor ground-disturbing activities to ensure no work is encroaching on established buffer areas.

4. Destruction of a maternity den burrow shall only proceed after the maternity den is no longer active and no badgers are present within the burrow.

MM BIO-10: Other Sensitive Reptile Species Avoidance. If the pre-disturbance biological survey identifies the presence of California glossy snake, San Joaquin coachwhip, western spadefoot, or any other reptile species of special concern within the proposed work area, the following measures should be implemented:

1. If any California glossy snakes, San Joaquin coachwhips, or any other reptile species of special concern are observed during construction, the identified special-status reptiles will be allowed to move out of the work area on their own or will be removed from the work area and released in adjacent suitable habitat by the Qualified Biologist. The Qualified Biologist will have all appropriate permits in place prior to handling any special-status reptiles or any other wildlife.

2. No monofilament plastic will be used, such as for erosion control.

3. All construction equipment and construction personnel vehicles will be checked prior to moving them, to ensure that no special-status reptile is under equipment/vehicles. If any individuals are detected beneath equipment or vehicles, the equipment or vehicles

will be left in place until the individual(s) moves out of harm's way on its own accord, as determined by a Qualified Biologist.

MM BIO-11: Crotch's Bumblebee. As the species is a Candidate for listing on the California Endangered Species Act (CESA), further surveys and measures may be recommended by CDFW or CalGEM. If bumblebee species that could be Crotch's bumblebee are observed at the Project Site during the pre-construction survey, CDFW should be contacted.

MM BIO-12: Sensitive Plant Species Avoidance. Rare plant surveys were conducted for this Project in 2023. Since the surveys occurred in a year during which rainfall was higher than normal, survey results should be valid for 5 years. No special-status plants, including rare, Threatened or Endangered plants were observed with the Project site or survey buffer.

MM BIO-13: Best Management Practices for Biological Resources. The following best management practices (BMP) will be implemented during all projects, operations, and maintenance activities to avoid and minimize potential significant adverse impacts on biological resources:

1. All vehicles will observe a 20 mile-per-hour speed limit in all areas of disturbance and on unpaved roads unless otherwise posted. Off-road traffic outside designated access routes will be prohibited. Speed limit signs will be posted at visible locations at the point of site entry and at regular intervals on all unpaved access roads. A reduced speed limit of 10 miles-per-hour will be posted and observed within 0.25-mile of any reported blunt-nosed leopard lizard observation and from sunset until sunrise within 0.25-mile of occupied San Joaquin kit fox dens.

2. All disturbance activities, except emergency situations or drilling that may require continuous operations, will occur only during daylight hours. Continuous 24-hour drilling activities will use directed lighting, shielding methods, or reduced lumen intensity. All new lighting fixtures for safety and security at facilities would be shielded, oriented downward, and on-demand lighting and/or with timers, to avoid unnecessary visual disturbance to wildlife.

3. All food-related trash items and microtrash, such as wrappers, cans, bottles, bottle tops, and food scraps will be disposed of in closed containers and routinely removed from the project activity site, at intervals of no less than once per week.

4. Excavations, spoils piles, unpaved access roadways, and parking and staging areas will be subject to dust control.

5. Herbicides application will be in accordance with existing laws and manufacturers' instructions (i.e., pesticide/herbicide labels). All herbicide chemicals used must be registered for use in the U.S. and California and must have a label certifying that the Federal Environmental Protection Agency (EPA) and the California Department of Pesticide Regulation (DPR) have approved the herbicide for use. Herbicides will not be sprayed within 50 feet of known occurrences of any other special-status plant occurrence or federal land. No rodenticides will be used on any project.

6. All open trenches, excavations, and/or holes more than 2 feet deep will be backfilled or covered at the end of each workday to prevent wildlife entrapment. If an

excavation or hole is too large to cover, escape ramps will be installed at an incline ratio of no greater than 2:1 at least for every 500 feet. All trenches and excavations will be inspected for the presence of wildlife each day prior to the start of work. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals.

7. All straight construction pipes, culverts, or similar structures with a diameter of 3.5-inches or greater that are stored at a construction site overnight will be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in any way. All bent pipe with a diameter of 3.5-inches or greater that cannot be visually inspected for wildlife with 100 percent certainty will be left in place and monitored by a Qualified Biologist using wildlife cameras and/or tracking material prior to being removed, capped, moved, or buried. If any wildlife is discovered inside a pipe, that section of pipe is not to be moved until the animal vacates the pipe on its own accord.

8. To enable San Joaquin kit foxes and other wildlife to pass through the project activity site, any new perimeter fencing installed around project work areas, with the exception of where fencing is required to exclude wildlife from known hazards, will include a 4 to 6-inch opening between the fence and the ground or the fence will be raised 4 to 6 inches above the ground. The bottom of the fence fabric will be knuckled (wrapped back to form a smooth edge), if necessary, to protect wildlife from injury when passing underneath.

9. All vertical tubes used in project construction and chain link fencing poles will be capped to avoid entrapment and death of special-status wildlife and birds.

10. Discovery of State or federally listed species that are injured or dead will be reported immediately via telephone and within 24 hours in writing to CDFW and USFWS Office as relevant. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information, such as the cause of injury or death (if known).

11. All activity will use previously disturbed areas to the maximum extent feasible to minimize the amount of new disturbance in areas with existing natural lands.

12. Vehicle, equipment, and material storage will be limited to previously disturbed areas or predefined storage/laydown areas that are incorporated into work site limits. All concrete and asphalt debris will be removed from the project locations to either a designated concrete or asphalt storage facility, or off site for recycling or proper disposal on completion of construction.

13. No vehicles or construction equipment will be parked within a water of the State, including any dry wash or drainage, nor shall vehicles or construction equipment cross, or travel within a water of the State, including any wash or drainage, where and when water is flowing. No materials will be stored within a Water of the State.

14. All construction equipment and construction personnel vehicles will be checked underneath prior to moving them, to ensure that no wildlife is under equipment/vehicles. If any individuals are detected beneath equipment or vehicles, the equipment or vehicles will be left in place until the wildlife moves out of harm's way on its own accord, as determined by a Qualified Biologist.

15. All tracked vehicles and other construction equipment entering the Project Area from outside of Kern County will be washed or maintained to be weed-free.

16. All washing of trucks, paint, equipment, or similar activities including concrete washout will occur in designated areas/facilities where runoff is fully contained for collection prior to off-site disposal. Wash water may not be discharged from the project activity site, must be stored in a manner that excludes sensitive wildlife species, and located at least 100 feet from any water of the State.

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APPENDIX A

Project Figures

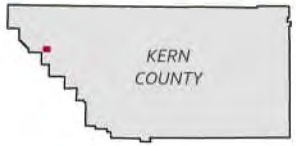


LEGEND:

BNLL and Botanical Survey Area

Exclusion Fence

MAP EXTENT:



Source: Esri Online Imagery Basemap, County of Kern
Coordinate System:NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

0 700 1,400
FEET

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME:
WESTSIDE TRENDS PROJECT
KERN COUNTY, CA

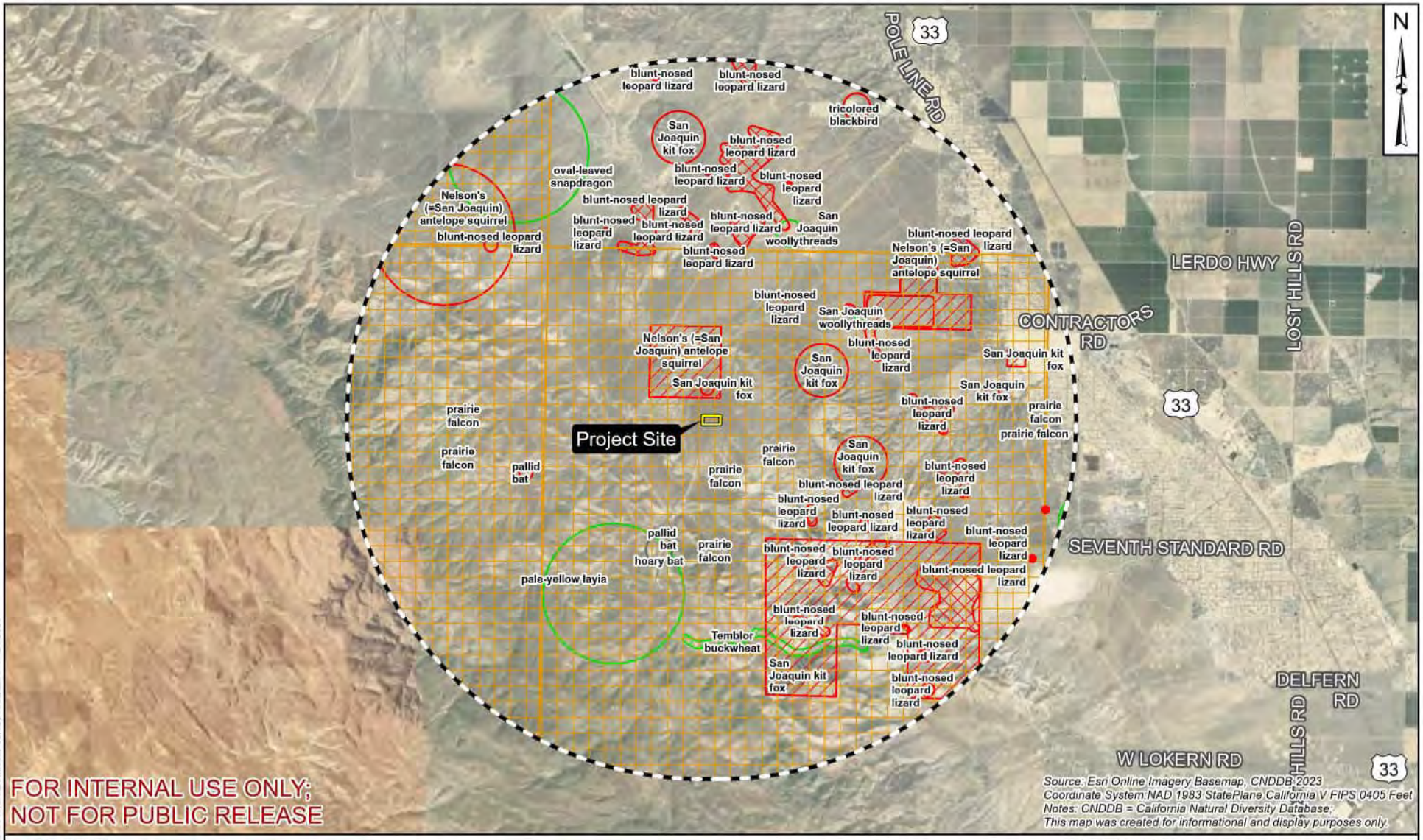
PROJECT NUMBER: 2302-0472

DATE: November 2023

GENERAL PROJECT AREA

FIGURE 1

Z:\GIS Projects\GIS Maps\Map Projects\Westside Trend Project\Botanical Survey Area.aprx 11/28/2023



FOR INTERNAL USE ONLY;
NOT FOR PUBLIC RELEASE

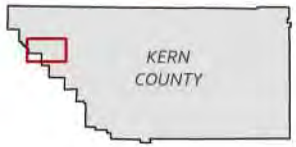
LEGEND:

- Project Site
- Buffer Zone (5 miles)

CNDDB Occurrences

- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Multiple (circular)
- Sensitive EO's (Commercial only)

MAP EXTENT:



0 1 2 Miles

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: WESTSIDE TRENDS PROJECT
KERN COUNTY, CA

PROJECT NUMBER: 2302-0472

DATE: November 2023

CNDDB OCCURRENCES

FIGURE 2

Z:\GIS Projects\Grid Maps\Map Projects\Westside Trends Project\Botanical Survey Area.aprx - 11/28/2023

APPENDIX B

Project Photos

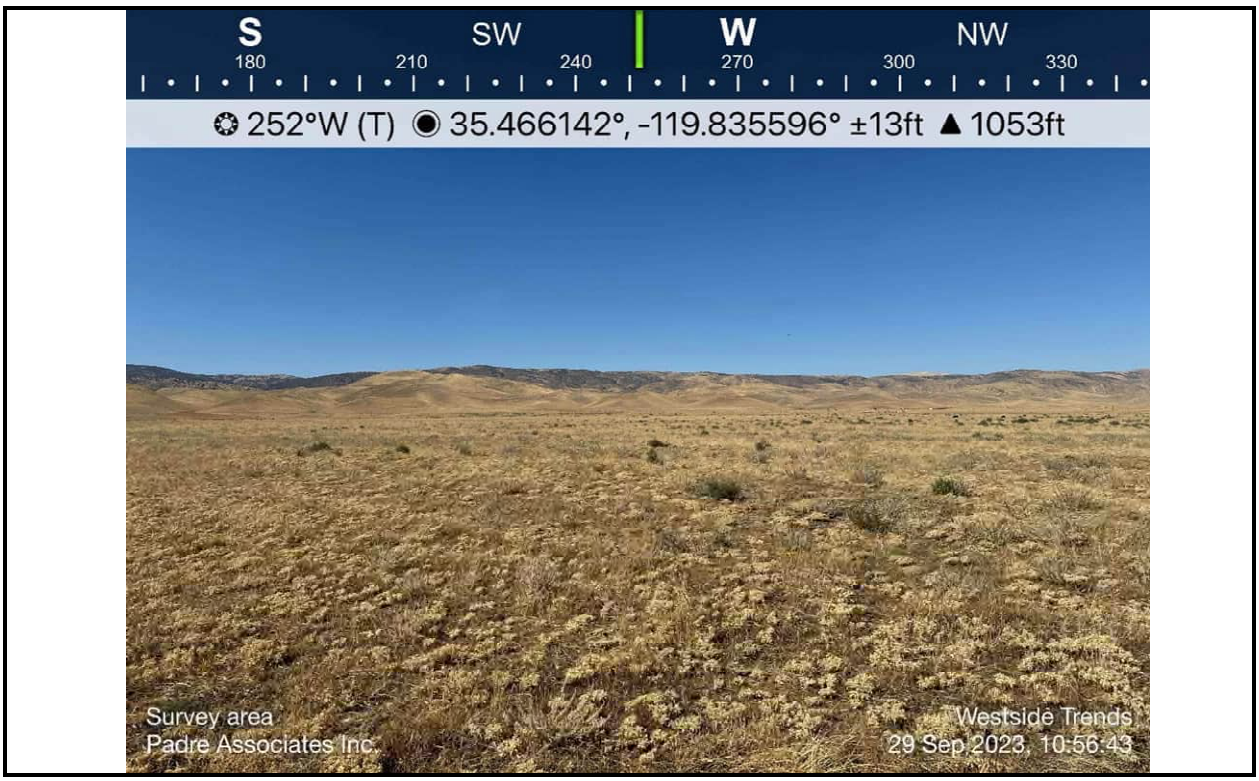


Photo 1. Grassland habitat in and surrounding the Project Area. Coordinates are in NAD83.



Photo 2. Grassland habitat in and surrounding the Project Area. Coordinates are in NAD83.

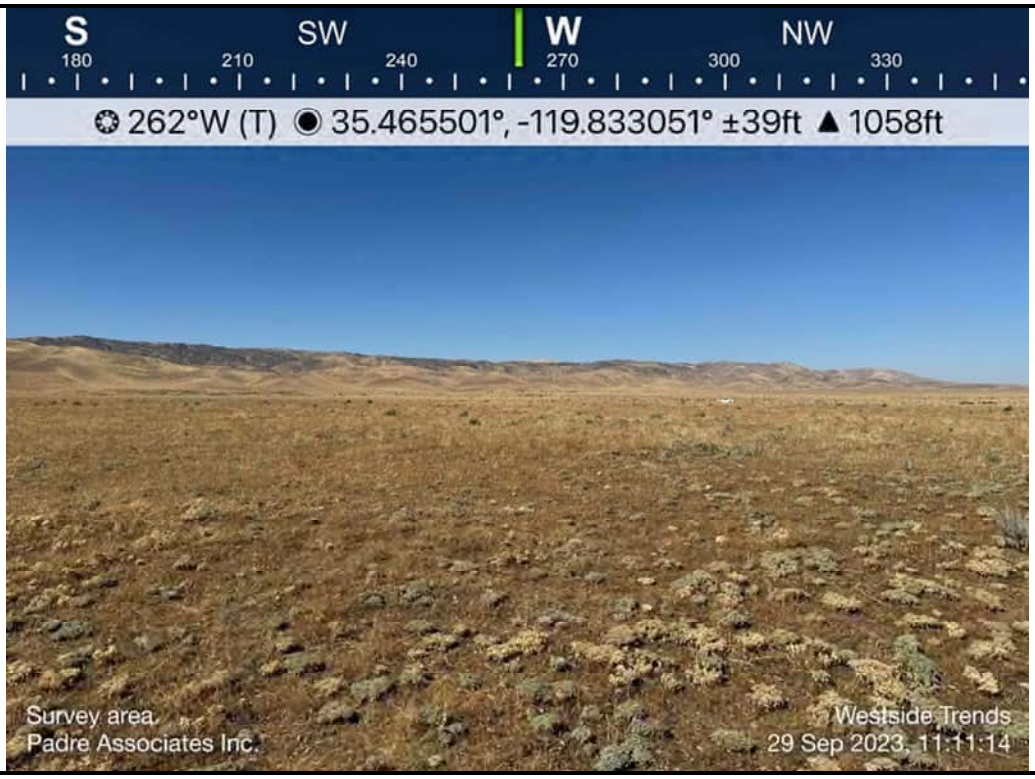


Photo 3. Grassland habitat in and surrounding the Project Area. Coordinates are in NAD83.



Photo 4. Exclusion fence installed around approximately 2.1 acres of grassland habitat within the Well Site.

APPENDIX C

Botanical Survey Report

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

October 10, 2023
Project No. 2302-0472

Bidr, LLC.
19100 7th Standard Road
McKittrick, CA. 93251

Attention: Mr. Andreas Kongsgården

Subject: Botanical Survey Report for the Westside Trend 20-acre Project in western Kern County, California.

Padre Associates, Inc. (Padre) has prepared this summary for Bidr, LLC. summarizing the results of the 2023 botanical surveys conducted for the purpose of drilling an exploration well within western Kern County. Botanical surveys were conducted within the leases to identify any threatened, endangered, or sensitive (TES) plant species that may be present within or surrounding the Project area. This report outlines the results of the botanical survey conducted by Padre.

PROJECT DESCRIPTION

The 20-acre Project site is located approximately 10 miles south of Blackwell's Corner and approximately 8 miles west of Highway 33 and 7th Standard Road. The Project occurs within the northern half of APN 085-170-09 and is located in Section 29 Township 28 South Range 20 East towards the northwest corner of Carneros Rock United States Geological Survey (USGS) quadrangle. The elevation profile of the Project site is approximately 320-326 meters. The surveys were conducted for the purpose of drilling an exploration well. The Project is located within the western portion of the San Joaquin Valley west of the Belridge Oilfield.

DESKTOP ANALYSIS

Padre conducted a desktop analysis using United States Geological Survey (USGS) 7.5-minute quadrangles (quads) to identify state and/or federally listed or otherwise sensitive plant species that may occur in or near the Project area. The analysis included the quad that the Project occurs in, Carneros Rocks, and the 8 surrounding quads: Blackwells Corner, Reward, Lost Hills, Belridge, McKittrick Summit, Simmler, Las Yeguas Ranch, and Shale Point. The desktop analysis included a query of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) Rare Plant Inventory List, and U.S. Fish and Wildlife's Service (USFWS) Information for Planning and Conservation (iPaC) planning tool. Padre biologists professional experience within the general area conducting surveys was also used to determine species potential to occur. The sensitive plants that have potential to occur within the Project site and that might be impacted by Project activities have been listed in **Table 1.**

Table 1. Threatened, endangered, and/or sensitive plant species with potential to occur within or near the Project Site.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Rationale
Allium howellii var. howellii Howell's onion	-/4.3	Valley and foothill grassland, clay (sometimes), serpentinite (sometimes) soils; 50-2200 m.	Mar-Apr	**Low potential.** Potential habitat is present. No recorded occurrences within the Project quad. Nearest occurrence is about 11 miles north of the Project area.
Amsinckia furcata forked fiddleneck	-/4.2	Cismontane woodland, valley and foothill grassland; 50-1000 m.	Feb-May	**Low potential.** Potential habitat is present. No recorded occurrences within the Project quad. The nearest occurrence is in the Carrizo Plain National Monument.
Androsace elongata ssp. acuta California androsace	-/4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland; 150-1305 m.	Mar-Jun	**Absent**. Project site is outside of the known range (CalFlora, 2023). Only nearby observation is about 6 miles southwest of the Project area within the Temblor Mountain Range from 2010. (CCH 2023).
Antirrhinum ovatum oval-leaved snapdragon	-/4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland; alkaline (often), clay (sometimes) soils; 200-1000 m.	May-Nov	**Moderate potential.** Habitat is present in the Project site. The nearest location is about 5 miles north in a similar habitat to the Project (CNDDB 2023).
Astragalus macrodon Salinas milk-vetch	-/4.3	Chaparral, Cismontane woodland, valley and foothill grassland. sandstone (sometimes), serpentinite (sometimes), shale (sometimes) soils; 250-950 m.	Apr-Jul	**Absent.** The species is not found within the San Joaquin Valley geographic subdivision of the California Floristics Province (Jepson 2023).
Atriplex coronata var. *coronata* crownscale	-/4.2	Chenopod scrub, valley and foothill grassland, vernal pools. alkaline and clay (often) soils; 1-590 m.	Mar-Oct	**Low potential.** Marginal habitat is present. Species typically occurs in vernal pools which are absent from the Project site. No observations within the Project quad, nearest occurrence is approximately 16 miles southeast of the Project (CCH 2023).

Table 1. Threatened, endangered, and/or sensitive plant species with potential to occur within or near the Project Site.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Rationale
Atriplex coronata var. vallicola Lost Hills crownscale	-/1B.2	Chenopod scrub, valley and foothill grassland, vernal pool, wetland; in powdery, alkaline soils that are vernally moist with *Frankenia*, *Atriplex* spp. and *Distichlis*; 50-635 m.	Apr-Sep	**Absent.** No vernal pools occur within the Project area to keep soil moist. Nearest occurrence is 13 miles south of the Project (CNDDB 2023).
Atriplex flavida Carrizo Plain crownscale	-/1B.3	Chenopod scrub, valley and foothill grassland, vernal pools. Alkaline soil; 585-605 m.	Mar-Jul	**Absent.** The species is not found within the San Joaquin Valley geographic subdivision of the California Floristics Province (Jepson 2023).The Project site is not within the elevation range for the species.
Canbya candida white pygmy-poppy	-/4.2	Joshua tree "woodland", Mojavean desert scrub, pinyon and juniper woodland. Granitic, gravelly and sandy soil; 600- 1460 m.	Mar-Jun	**Absent.** The species is not found within the San Joaquin Valley geographic subdivision of the California Floristics Province (Jepson 2023). The Project site is not within the elevation range for the species.
Caulanthus californicus California jewelflower	FE, SE/1B.1	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. Sandy soils; 61-1000 m.	Feb-May	**Low potential.** Habitat present. The nearest record of *C. californicus* is from 1937, approximately 10 miles east of the Project site (CNDDB 2023).
Caulanthus lemmonii Lemmon's jewelflower	-/1B.2	Pinyon and juniper woodland, valley and foothill grassland; 80-1580 m.	Feb-May	**Low potential.** Habitat present. The nearest location of *C. lemmonii* is about 8 miles south in the Carrizo Plains (CNDDB 2023).
Clarkia xantiana ssp. Parviflora Kern Canyon clarkia	-/4.2	Chaparral, cismontane woodland, Great Basin scrub, valley and foothill grassland, roadsides (sometimes), rocky (sometimes), sandy (often) soils, slopes; 700-3620 m.	May-Jun	**Absent.** The species is not found within the San Joaquin Valley geographic subdivision of the California Floristics Province (Jepson 2023). The Project is outside of the elevation range for the species.

Table 1. Threatened, endangered, and/or sensitive plant species with potential to occur within or near the Project Site.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Rationale
Delphinium recurvatum recurved larkspur	-/1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland. Alkaline soils; 3-790 m.	Mar-Jun	**Moderate potential.** Habitat present. The nearest location of *D. recurvatum* is about 11 miles south in the Carrizo Plains (CNDDB 2023).
Eremalche parryi ssp. kernensis Kern mallow	FE/1B.2	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. Dry areas, openings, sandy (sometimes) and clay (sometimes) soils; 70-1290 m.	Jan-May	**Moderate potential.** Preferred habitat present. The nearest location of *E. parryi ssp. kernesis* is about 8 miles east of the Project site (CNDDB 2023).
Eriastrum hooveri Hoover's eriastrum	FD/4.2	Chenopod scrub, Pinyon and juniper woodland, valley and foothill grassland. Gravelly (sometimes) soils; 50-915 m.	Mar-Jul	**Low potential.** Habitat present. However, Project area lacks gravelly soils. The nearest location of *E. hooveri* is about 6 miles west of the Project site within the Temblor range (CNDDB 2023).
Eriogonum gossypinum cottony buckwheat	-/4.2	Chenopod scrub, valley and foothill grassland. Clay soils; 100- 550 m.	Mar-Sep	**Moderate potential.** Preferred habitat present. There are no nearby records of *E. gossypinum* near the Project site (CNDDB 2023).
Eriogonum nudum var. indictum protruding buckwheat	-/4.2	Chaparral, chenopod scrub, cismontane woodland. Clay and Serpentinite soils; 150-1463 m.	May-Oct	**Absent.** No habitat present. The Project area is a large grassland. No occurrences within the Project quad.
Eriogonum temblorense Temblor buckwheat	-/1B.2	Valley and foothill grassland; 300-1000 m.	May-Sep	**Absent.** The species is not found within the San Joaquin Valley geographic subdivision of the California Floristics Province (Jepson 2023).
Eryngium spinosepalum spiny-sepaled button-celery	-/1B.2	Valley and foothill grassland, vernal pools; 80-975 m.	Apr-Jun	**Absent**. Outside of the known range (CalFlora 2023).

Table 1. Threatened, endangered, and/or sensitive plant species with potential to occur within or near the Project Site.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Rationale
Eschscholzia hypecoides San Benito poppy	-/4.3	Chaparral, cismontane woodland, valley and foothill grassland. Clay and serpentinite soils; 200-1500 m.	Mar-Jun	**Absent.** The species is not found within the San Joaquin Valley geographic subdivision of the California Floristics Province (Jepson 2023). The Project is outside of the species elevation profile.
Eschscholzia lemmonii ssp. kernensis Tejon poppy	-/1B.1	Chenopod scrub, valley and foothill grassland; 160-1000 m.	Mar-May	**Absent.** The species is not found within the San Joaquin Valley geographic subdivision of the California Floristics Province (Jepson 2023).
Eschscholzia rhombipetala diamond-petaled California poppy	-/1B.1	Valley and foothill grassland; 0-975 m.	Mar-Apr	**Absent**. Outside of the known range (CalFlora 2023).
Fritillaria agrestis stinkbells	-/4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland; Clay and serpentinite (sometimes) soils; 10–1555 m.	Mar-Jun	**Absent**. Outside of the known range (CalFlora 2023).
Lasthenia chrysantha alkali-sink goldfields	-/1B.1	Vernal pools. Alkaline soils; 0-200 m.	Feb-Apr	**Absent**. No habitat present. Occurs in vernal pools, wet saline flats which Project lacks.
Lasthenia ferrisiae Ferris' goldfields	-/4.2	Vernal pools; 20-700 m.	Feb-May	**Absent**. No habitat present. Occurs in vernal pools, wet saline flats which Project lacks.
Lasthenia glabrata ssp. coulteri Coulter's goldfield	-/1B.1	Marshes and swamps, playas, vernal pools; 1-1220 m.	Feb-Jun	**Absent**. No habitat present. Occurs in saline places, vernal pools which Project lacks.
Layia heterotricha Pale-yellow layia	-/1B.1	Cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. Alkaline (sometimes) and clay (sometimes) soils; 300–1705 m.	Mar-Jun	**Absent**. Outside of the known range (CalFlora 2023).

Table 1. Threatened, endangered, and/or sensitive plant species with potential to occur within or near the Project Site.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Rationale
Layia munzii Munz's tidy-tips	-/1B.1	Chenopod scrub, valley and foothill grassland. Alkaline clay soils; 150-700 m.	Mar-Apr	**Absent.** No records within Carneros Rocks (Project) quad. Alkaline soil is not present within the Project area.
Lepidium jaredii ssp. jaredii Jared's pepper-grass	-/1B.2	Valley and foothill grassland; 335-1005 m.	Mar-May	**Absent**. Project site is within the geographic range for the species, but outside of the elevation range. Soil preference and microhabitat are not present.).
Madia radiata showy golden madia	-/1B.1	Cismontane woodland, valley and foothill grassland; 25-1215 m.	Mar-May	**Absent.** The species is not found within the San Joaquin Valley geographic subdivision of the California Floristics Province (Jepson 2023).
Monolopia congdonii San Joaquin woollythreads	FE/1B.2	Chenopod scrub and valley and foothill grassland in sandy soils; 60-800 m.	Feb-May	**Moderate potential.** Habitat is present. Project area lacks sandy soils. Padre has observed this species approximately 2.4 miles north near an unrelated Project.
Puccinellia simplex California alkali grass	-/1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools alkaline flats, lake margins, vernally mesic; 2- 930 m.	Mar-May	**Absent.** No habitat present. Occurs in saline flats, mineral springs (Jepson 2023) which Project lacks.
Stylocline citroleum oil neststraw	-/1B.1	Chenopod scrub, coastal scrub, valley and foothill grassland. Clay soils; 50-400 m.	Mar-Apr	**Absent.** Scrub habitat not present. No occurrences in the Project quad.
Trichostema ovatum San Joaquin bluecurls	-/4.2	Chenopod scrub, valley and foothill grassland; 65-320 m.	Apr-Oct	**High potential.** Habitat present. No occurrences in the Project quad. The closest occurrence is 21 miles east (CNDDB 2023). A species in the same genus, *T. lanceolatum* was observed during Project survey. *T. ovatum* was not observed.

Table 1. Threatened, endangered, and/or sensitive plant species with potential to occur within or near the Project Site.

Species	Listing Status/Rare Plant Rank	Habitat	Blooming Period	Rationale

CCH1 = Consortium of California Herbaria Portal 1
CNDDB= California Natural Diversity Database
FE = Federally listed Endangered (USFWS)
FD= Federally de-listed (USFWS)
SE = State listed Endangered (CDFW)

CNPS (California Native Plant Society) Codes, California Rare Plant Rank:
- 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere
- 2B = Plants Rare, Threatened, or Endangered in California but more common Elsewhere
- 4 = Watch List: Limited Distribution
  - 0.1 = Seriously Threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
  - 0.2 = Fairly Threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
  - 0.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats know)

BOTANICAL REFERENCE SITE VISITS

Prior to surveys, Padre biologists visited special-status plant reference sites (if feasible) for early blooming plants to determine if federally and state listed plant species were in bloom for proper species identification. For those plants not observed, plants in the same genus were noted to ensure that blooming was present and/or other local botanist/biologists were contacted for reference site observations and information. Reference sites for federally listed species were visited to determine if the plants were in bloom (**Table 2**). Reference sites for California Native Plant Society Rare Ranked Plants were also visited; however, several of the plants listed in potential to occur start blooming in February and reference sites were visited in late March/early April. A reference site for California jewelflower (*Caulanthus californicus*) was not visited in 2023; however, reports in iNaturalist confirm that the species was in full bloom within areas of the Carrizo National Monument in April 2023 (iNaturalist 2023) suggesting the species would also be in bloom and identifiable within the Project site during botanical site visits.

Table 2. Reference Sites visited for State and/or Federally Listed Plants.

Common Name	Scientific Name	Date (2023)	Reference Site Location/GPS	Description of Reference Site	Observed?
San Joaquin woollythreads	*Monolopia congdonii*	4/6	West of Belridge 35.502460ºN, 119.814464ºW	Annual grassland adjacent to a disturbed access road	Yes
Kern mallow	*Eremalche parryi* ssp. *kernensis*	5/9	Lokern 35.394735ºN, 119.643203ºW	Chenopod scrub adjacent to a disturbed access road	Yes

SURVEY METHODOLOGIES

Padre biologists conducted botanical surveys on April 6, May 11, and June 7, 2023. Additionally, botanical species were also noted during other surveys (i.e., blunt-nosed leopard lizard surveys) within the Project site through September 2023. Pedestrian transects, spaced approximately ten feet apart, were completed in areas that are planned to be disturbed. The Project site is composed of annual grassland habitat (**Photolog**). Areas where the botanical surveys were conducted are depicted in **Figure 1**. Surveys were conducted during the beginning of the blooming periods when plants are both evident (i.e., flowering) and identifiable. All plant taxa occurring within the Project area were identified to taxonomic level necessary to determine whether they are a special status plant. The Jepson Manual, Second Edition (Baldwin *et al*. 2012) and Kern County Flora key (Moe 2016) were consulted and used for the identification of species observed in the field. Plant species that could not be readily identified in the field were collected for in-house identification using botanical keys and manuals.

State and Federal Agency Survey Guidelines

Several survey protocols were consulted with to obtain the best results for the survey area. These include the following:

- BLM. 2009. Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species.
- California Department of Fish and Wildlife. 2018. Protocols for surveying and evaluating impacts to special-status native plant populations and sensitive natural communities.
- California Native Plant Society. 2001. CNPS botanical survey guidelines.
- United States Fish and Wildlife Service. 2000. Guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate species.

RESULTS

The Project site is west of an active lease of oil and gas production in the Belridge Oilfield. The topography of the Project site is flat terrain with a slope of 2 to 5 percent and a range of elevation from approximately 320 to 326 meters (1050 to 1070 feet). The soils within the Project site include Milham sandy loam and Panoche clay loam. The Project location is within Annual grassland habitat. Padre biologists identified 38 plant species throughout the survey area within the Project Site. The species observed were common native or non-native species typically found in similar habitats in western Kern County and surrounding areas. Dominant herb/forb species include fiddleneck (*Amsinckia* sp.) and naturalized non-native grasses. Below is a table of the plant species observed at the Project site (**Table 3**). Although San Joaquin woollythreads (*Monolopia congdonii*) was observed at a reference site near the Project site 2.7 miles north, none were observed within the Project site during the botanical surveys.

Table 3. Plant species observed during botanical survey of the Westside Trend Project during the 2023 season.

Scientific Name	Common Name	Habit	Family
Acmispon brachycarpus	Foothill deervetch	AH	Fabaceae
Acmispon wrangelianus	Chilean trefoil	AH	Fabaceae
Amsinckia menziesii	Fiddleneck	AH	Boraginaceae
Astragalus didymocarpus var. didymocarpus	Dwarf white milkvetch	AH	Fabaceae
Astragalus lentiginosus	Freckled milk vetch	AH	Fabaceae
Bromus madritensis ssp. rubens	Red brome	AG	Poaceae
Camissonia campestris	Field sun cup	AH	Onagraceae
Castilleja exserta ssp. exserta	Purple owl's clover	AH	Orobanchaceae
Caulanthus lasiophyllus	California mustard	AH	Brassicaceae
Croton setiger	Turkey mullein	AH	Euphorbiaceae
Deinandra pallida	Kern tarweed	AH	Asteraceae
Dichelostemma capitatum	Blue dicks	PH	Themidaceae
Erigeron canadensis	Horseweed	AH	Asteraceae
Erodium botrys	Longbeak stork's bill	AH	Geraniaceae
Festuca microstachys	Small fescue	AG	Poaceae
Festuca myuros	Rat-tail fescue	AG	Poaceae
Gilia tricolor	Bird's eye gilia	AH	Polemoniaceae
Gutierrezia californica	Matchweed	PH	Asteraceae
Herniaria hirsute	Hairy rupturewart	AH	Caryophyllaceae
Hordeum murinum ssp. *leporinum*	Farmer's foxtail	AG	Poaceae
Isocoma acradenia	Alkali goldenbush	S	Asteraceae
Koeleria geradi	Annual June grass	AG	Poaceae
Lactuca serriola	Prickly lettuce	AH	Asteraceae
Lasthenia californica	California goldfields	AH	Asteraceae
Lepidium nitidum	Shiny peppergrass	AH	Brassicaceae
Lupinus microcarpus	Chick lupin	AH	Fabaceae
Lupinus succulentus	Arroyo lupine	AH	Fabaceae
Malacothrix coulteri	Snakes head	AH	Asteraceae
Malacothrix glabrata	Desert dandelion	AH	Asteraceae
Malva parviflora	Cheeseweed mallow	AH	Malvaceae
Monolopia lanceolata	Common monolopia	AH	Asteraceae
Oxalis stricta	Sour clover	AH	Oxalidaceae
Phacelia fremontii	Fremont's phacelia	AH	Boraginaceae
Plagiobothrys canescens	popcorn flower	AH	Boraginaceae
Salsola tragus	Russian thistle	AH	Chenopodiaceae
Sisymbrium irio	London rocket	AH	Brassicaceae
Trichostema lanceolatum	Vinegarweed	AH	Lamiaceae
Tropidocarpum gracile	Dobie pod	AH	Brassicaceae

Habit Definitions:
AG = annual grass.
AH = annual herb.
PH = perennial herb.
S = shrub.

DISCUSSION

No special-status plant species were observed during the botanical surveys. The timing of the survey occurred when the majority of the species were both evident and identifiable at reference locations. Surveys can confirm the presence of sensitive plant species, but negative results do not necessarily mean sensitive plants are absent from a survey area. Suitable habitat

for various sensitive species is present. The section below outlines measures recommended to avoid take and minimize disturbance of listed and sensitive species.

RECOMMENDATIONS

The following section outlines various recommendations to minimize the take of any listed or sensitive plant species that may occur where Project activities are planned. Implementation of these measures is designed to avoid and/or minimize effects to listed plant species and their habitats.

- All Project employees and contractors will receive Environmental Awareness Training prior to working on the Project including attending a sensitive species education program developed by trained biologists, focusing on the protected and sensitive plant species that may occur in the Project areas. At a minimum, the program will cover species distribution, identification characteristics, and sensitivity to human activities, legal protection, penalties for violation of state and federal laws, reporting requirements, and project mitigation measures. In addition, the training will emphasize the avoidance of contact with onsite wildlife and Biologically Sensitive Areas by Project personnel.
- Prior to any ground disturbance activities within special-status species habitat a pre-disturbance survey by a qualified biologist shall be conducted to record existing conditions of the site, determine if conditions have changed since the reconnaissance or protocol surveys were conducted, and to determine where sensitive species avoidance buffers will be established.
- No incidental take or relocation of any state-listed or federally-listed plant species may occur.
- If listed plant species are observed during pre-disturbance survey, then the Department approved buffers shall be established. If non-listed sensitive plants are observed during pre-disturbance survey, then a 50-foot buffer shall be established.
- Vehicles will use existing and/or designated roads. Off-road travel outside of designated access roads is prohibited.
- Dust control (use of water trucks) will be implemented during all project activities (i.e., excavations, spoil piles, access roads, and parking and staging areas, etc.) that create a substantial amount of dust. Fugitive dust can accumulate on the surfaces of plants and effect photosynthetic processes, which may result in the death of certain plants.
- All spills of hazardous materials shall be immediately contained and cleaned up to prevent exposure to plant species.
- Topsoil that can potentially or is known to support sensitive plant species should be stockpiled and redistributed over portions of work areas that will be temporarily disturbed.
- In any locations where work must be conducted near Biologically Sensitive Areas, on-site biological monitoring will be performed during initial ground disturbing activities to ensure that sensitive plant species are not impacted. The biological monitor shall flag-off or mark-off all areas clearly within the location where sensitive plant species are present. Project

personnel shall avoid all flagged areas and Project activities shall avoid disturbance activities in these areas.

CONCLUSION

If you have any questions regarding this information, please contact Ms. Haley Martin at (661) 706-7238 ext. 303 or Mr. Angel Correa at (661) 829-2686 ext. 301.

PADRE ASSOCIATES, INC.



William Collins
Staff Biologist



Haley Martin
Staff Biologist

Attachment: References
Figure 1. Botanical Survey Area
Photolog

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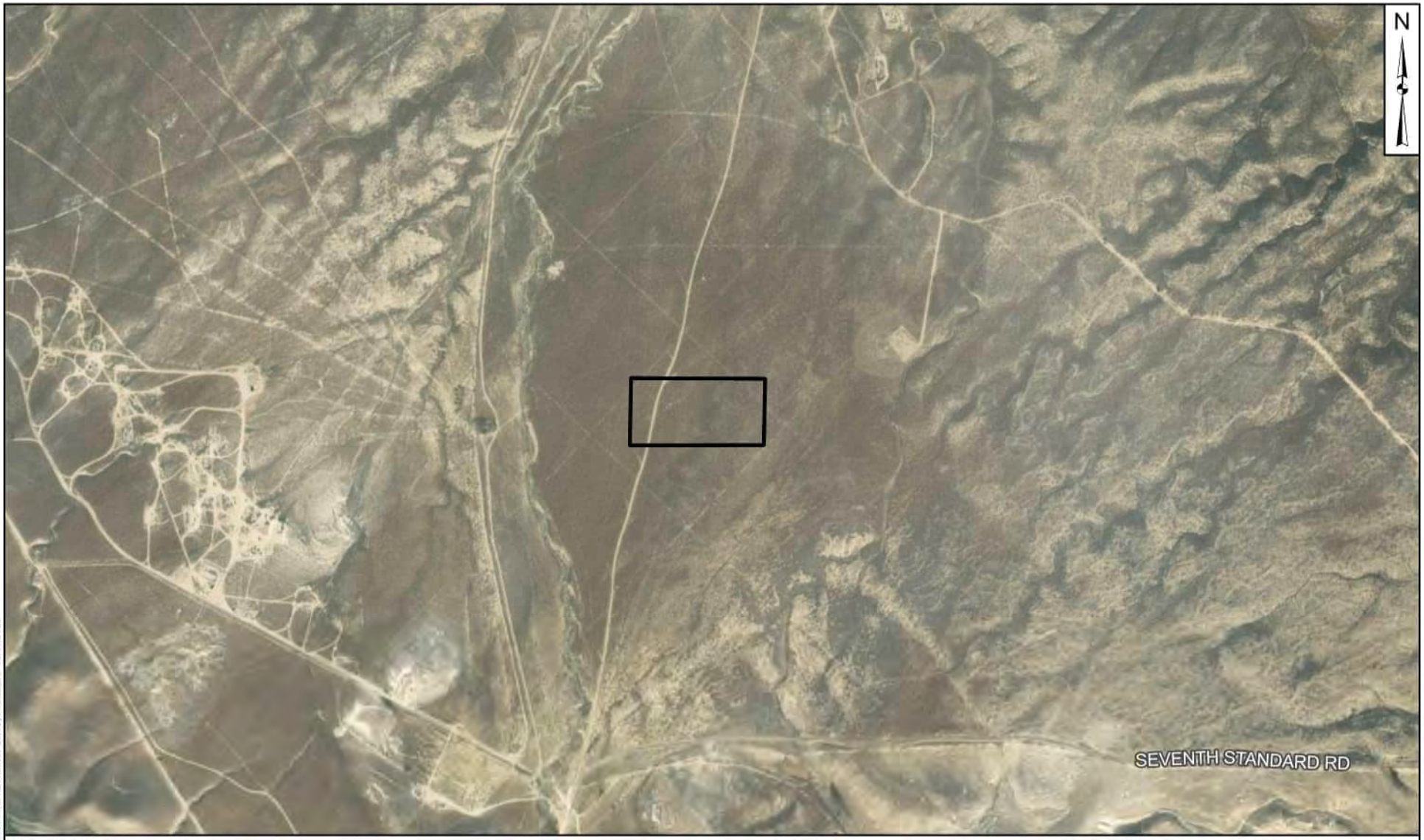
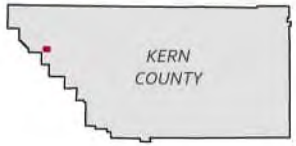


LEGEND:

Botanical Survey Area

MAP EXTENT:



Source: Esri Online Imagery Basemap, County of Kern
Coordinate System:NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

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padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: WESTSIDE TRENDS PROJECT
KERN COUNTY, CA

PROJECT NUMBER: 2302-0472

DATE: October 2023

BOTANICAL SURVEY AREA

FIGURE 1

Z:\GIS Projects\GIS Maps\Maps Project\Westside Trend Project\Botanical Survey Area.aprx 10/11/2023

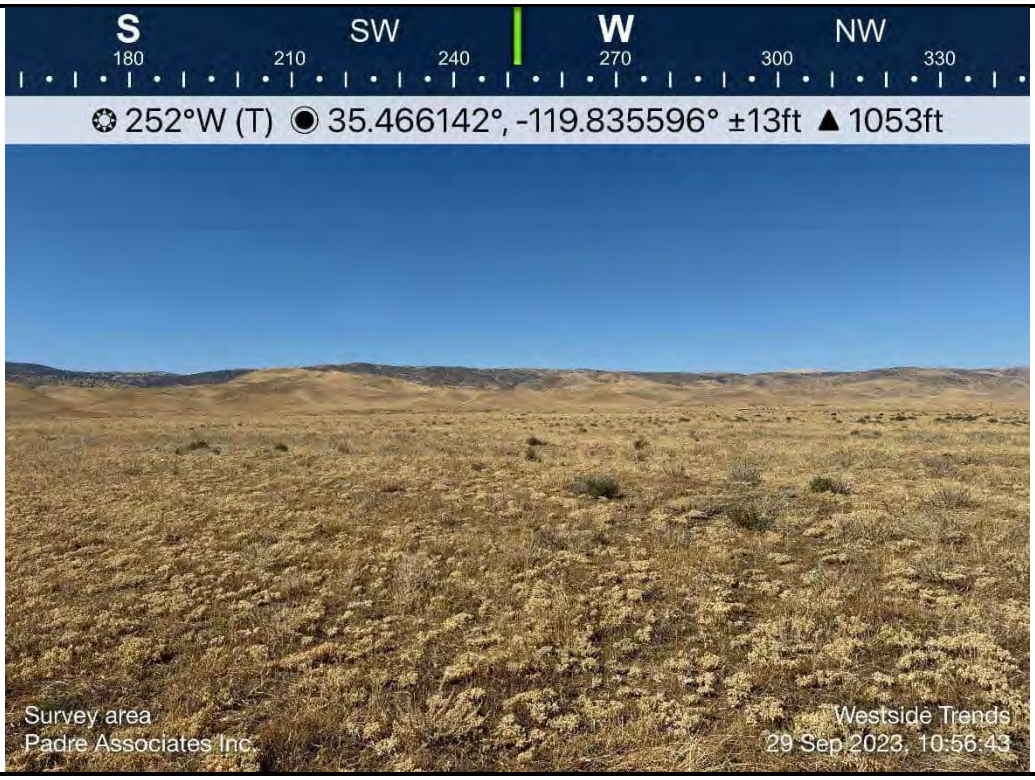

Photo 1. Grassland habitat in the botanical survey area for the Bidr Westside Trend Project. Coordinates are in NAD83.



Photo 2. Grassland habitat in the botanical survey area for the Bidr Westside Trend Project. Coordinates are in NAD83.

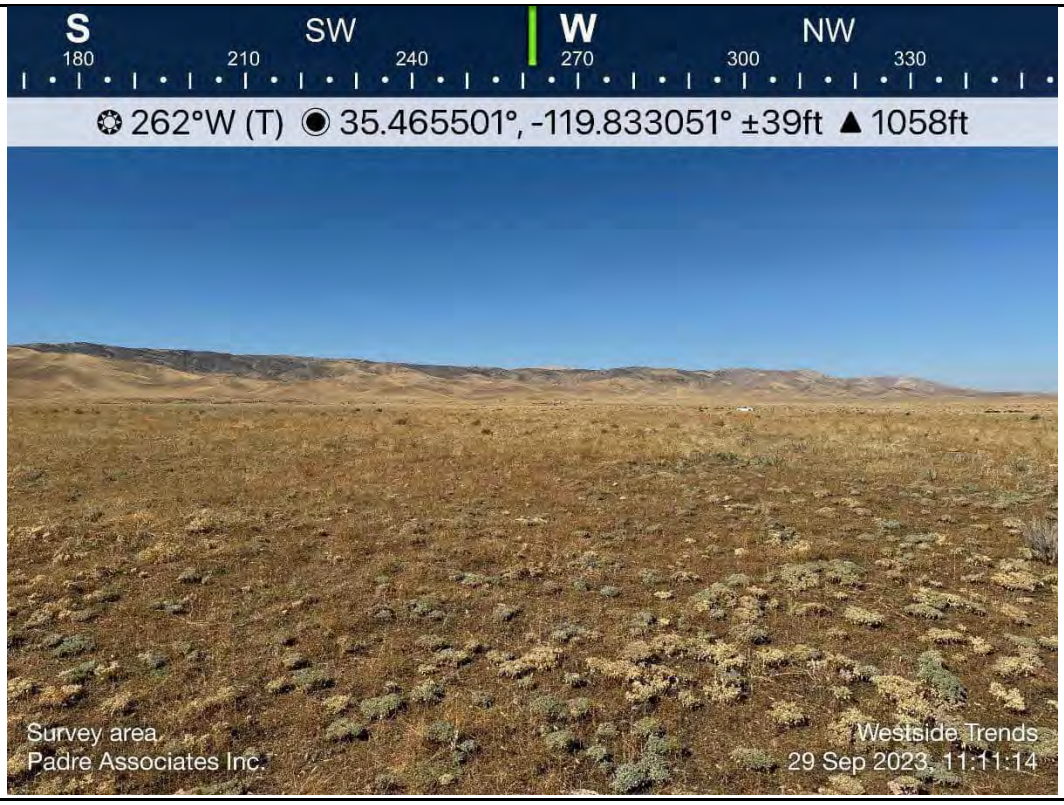

Photo 3. Grassland habitat in the botanical survey area for the Bidr Westside Trend Project. Coordinates are in NAD83.

APPENDIX D

Blunt-nosed leopard lizard Survey Report

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

November 2, 2023
Project No. 2302-0472

Bidr, LLC.
19100 7th Standard Road
McKittrick, CA. 93251

Attention: Mr. Andreas Kongsgården

Subject: Summary Report of 2023 Blunt-nosed Leopard Lizard Surveys for the drilling of an exploration well as part of the Westside Trend Project in western Kern County, California

Dear Mr. Kongsgården:

Padre Associates, Inc. (Padre) has prepared this report for Bidr, LLC. summarizing the results of the 2023 blunt-nosed leopard lizard (BNLL) protocol-level surveys conducted for the purpose of drilling an exploration well within western Kern County (**Figure 1**). Padre conducted protocol-level BNLL surveys during the 2023 calendar year to determine if BNLL are present within the area of the proposed Project. This report outlines the results of these surveys and includes a table of parameters collected (times, temperatures, lizard species observed, etc.) during the survey dates.

BACKGROUND

The Project site is located approximately 14 miles southwest of Lost Hills (**Figure 1**). The Project site is approximately 20 acres, in the northern half of APN 085-170-09, in Section 29 Township 28 south and Range 20 east. The surveys were conducted for the purpose of drilling an exploration well. The proposed Project area consists of dirt and gravel roads and grazed annual grassland habitat (**Photolog**).

The blunt-nosed leopard lizard (BNLL) is both federally and state listed as Endangered and is a California Fully Protected species under the California Department of Fish and Game Code (§5050). The code states that BNLL "may not be taken or possessed at any time. No provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected reptile…" (California Legislative Information 1974). This species of lizard was historically located on the floor of the San Joaquin Valley and Sierra foothills from Stanislaus County southward to the Tehachapi Mountains in Kern County, west of the San Joaquin Valley from Kettleman to western Kern County, Carrizo Plains, and in the southeastern Cuyama Valley in San Luis Obispo, Santa Barbara, and Ventura counties (USFWS 1998). Currently, the known range is fragmented populations across the floor of the San Joaquin Valley and in the Coast Range foothills. (USFWS 1998). The BNLL inhabits non-native grassland, native grassland, Valley Sink Scrub, and Valley Saltbush Scrub communities.

They are typically absent from areas with dense vegetation, seasonal flooding, or steep slopes (USFWS 1998).

The BNLL is a larger lizard ranging in size from snout to vent length (SVL) of 8.6 to 11.9 centimeters (USFWS 1998). The coloration of this lizard varies with rows of dark spots across their backs, alternating with white, cream-colored, or yellow bands. Other characteristics include a long tail, powerful hind limbs, and a short, blunt snout. (USFWS 1998). Breeding females have orange or reddish spots on the sides of their head, body and underside of their thighs and tail. Breeding males exhibit a salmon or rusty coloration on the undersides of their body and limbs. Juveniles may have yellow coloration on their undersides and red spots on their back that become brown when they are mature (USFWS 1998).

DESKTOP ANALYSIS

This is the first year that Padre has conducted BNLL surveys at the Project site. Prior to the start of the BNLL surveys at the Project site, a desktop analysis was conducted to identify any observation(s) of BNLL within or surrounding the Project site. The desktop analysis included a California Natural Diversity Database (CNDDB) search within a 3-mile radius of the Project Site. There are 16 records, some observed by Padre on unrelated Projects, ranging from 2011-2023 within a 3-mile radius of the Project Site (CNDDB, 2023). Padre conducted BNLL surveys for another nearby project in 2019 and observed multiple BNLL, approximately 2 to 2.6 miles from the Westside Trend Project site.

METHODOLOGIES

The BNLL surveys began on April 21, 2023, and concluded on September 29, 2023. At least one qualified Level II Padre biologist, along with the assistance of no more than three Level I surveyors, conducted surveys that met the requirements and recommendations in the *Approved Survey Methodology for the Blunt-nosed Leopard Lizard* (2019) from the California Department of Fish and Wildlife (CDFW). Level II Surveyors include Padre biologists Angel Correa, Andrew Krause, Haley Martin, William Collins, Eva Arrieta and Shannon Gonzalez, as well as Padre field technicians Lalo Gomez, and Jonathan Juarez. All Level II Surveyors have previously conducted at least 50 surveys and have at least one verified BNLL sighting, in accordance with the protocol.

Twelve survey days were conducted for this Project during the adult BNLL breeding period (April 15 to July 15) and five survey days were conducted during the hatchling/sub-adult period (August 15 to September 30). Of the five hatchling surveys, at least two were conducted between August 15 and August 30, and at least two were conducted between September 15 and September 30 (CDFW 2019).

The areas that were included in the survey contained potential habitat in the form of Annual Grassland communities with open, sandy patches and low vegetation (**Photolog**). The survey methodology consisted of slowly walking linear transects approximately 10-20 meters (32-65 feet) apart within the Project boundaries.

The surveys were conducted during optimal weather conditions, as stipulated in the CDFW revised 2019 protocol. Padre monitored beginning and ending air and soil temperatures (in degrees Fahrenheit), weather conditions, survey times and dates to ensure that survey conditions met protocol requirements (see **Table 1**).

RESULTS

No BNLL were observed during the surveys. Other lizard species observed during the surveys included: side-blotched lizard (*Uta stansburiana*). No other reptile species were observed during the surveys. The totals for individual lizards observed per surveys are presented in **Table 1.**

Although no BNLL were observed during the 2023 surveys, Bidr will fence the proposed well pad and work areas to deter any BNLL from entering the Project site before work occurs. The area proposed to be fenced is approximately 2.1 acres, within the BNLL survey area (**Figure 2**). The area to be fenced (using ERTEC Exclusion Fencing) is void of suitable BNLL burrows. Burrows were mapped for avoidance and can be found in **Figure 2**. No burrows will be impacted or disturbed from fencing activities. Bidr will plan for monthly inspections of the fence to ensure that the fence is still erect, sealed, and does not have any holes or other deficiencies that will allow BNLL to access the proposed work area. Fencing installation is planned to begin on November 6, 2023. A Padre biologist will be onsite for fencing activities.

CONCLUSION

No BNLL were observed during the protocol surveys. If the exclusion fence is not maintained, then additional BNLL surveys may be required within the fenced area if ground disturbance has not occurred by September 29, 2024. Currently, no Project activities are planned for outside of the exclusion fence. If Project activities are proposed to occur outside of the fenced area, and ground disturbance has not occurred by September 29, 2024, then BNLL surveys will need to be conducted again. If you have any questions regarding this information, please contact Ms. Haley Martin (661) 829-2686 ext. 303.

PADRE ASSOCIATES, INC.

Magaly Jurado
Staff Biologist

PADRE ASSOCIATES, INC.

Haley Martin
Staff Biologist

Attachment: References

Table 1: The parameters collected during the 2023 Bidr Westside Trend 20-acre blunt-nosed leopard lizard surveys.

Photolog

Figure 1. Westside Trend BNLL Survey Area

Figure 2. BNLL Exclusion Fence Area

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Table 1: The parameters collected during the 2023 Bidr Westside Trend blunt-nosed leopard lizard surveys.

Date	Start Time	End Time	Start Air Temp (°F)	Start Ground Temp (°F)	Start Weather (CC% & Wind mph)	End Air Temp (°F)	End Ground Temp (°F)	End Weather (CC% & Wind mph)	# GAMSIL	# UTASTA	# ASPMUN	Other Reptiles
4/21/23	11:19	11:59	77.9	78.6	0, 1	80.6	81.3	0, 1	0	1	0	N/A
4/28/23	9:14	9:55	83.4	84.3	0, 1	84.3	82.7	0, 2	0	5	0	N/A
5/11/23	12:49	13:35	80.3	12.7	0, 5	41.0	87.0	0, 3	0	0	0	N/A
5/12/23	11:45	12:19	86.7	100.8	0, 4	84.3	106.5	2, 4	0	1	0	N/A
5/22/23	8:46	9:17	80.3	87.4	10, 2	87.7	88.2	10, 2	0	0	0	N/A
6/5/23	10:48	11:09	84.6	N/A	88, 3	84.2	N/A	88, 3	0	0	0	N/A
6/6/23	10:59	11:30	78.7	84.2	90, 5	79.1	84.6	85, 5	0	0	0	N/A
6/7/23	12:30	13:06	77.9	76.2	89, 2	78.8	86.9	50, 2	0	1	0	N/A
6/8/23	10:30	11:08	77.2	84.7	5, 4	80.6	80.1	15, 1	0	0	0	N/A
6/27/23	8:30	9:06	79.0	85.1	5, 2	77.9	4:48	5, 3	0	3	0	N/A
6/28/23	9:19	9:51	82.4	99.7	0, 3	83.0	89.8	0,2	0	0	0	N/A
6/29/23	8:50	9:17	84.8	91.8	0, 4	85.7	88.0	0, 3	0	2	0	N/A
8/21/23	9:47	10:10	82.5	76.3	20, 6	82.4	77.0	20, 5	0	0	0	N/A
8/24/23	8:18	8:45	80.7	77.0	5, 0	79.4	77.3	5, 2	0	1	0	N/A
9/7/23	9:11	9:42	78.0	80.2	0, 4	77.7	82.7	0, 5	0	0	0	N/A
9/15/23	9:47	10:07	83.7	85.6	0, 1	83.3	84.6	0, 0	0	4	0	N/A
9/29/23	10:57	11:27	81.4	93.1	0, 2	82.9	90.5	0, 1	0	4	0	N/A

CC = *Cloud Cover*
GAMSIL = *Gambelia sila* (Blunt-nosed Leopard Lizard)
UTASTA = *Uta stansburiana elegans* (Western Side-Blotched Lizard)
ASPMUN = *Aspidoscelis tigris munda* (California Whiptail)

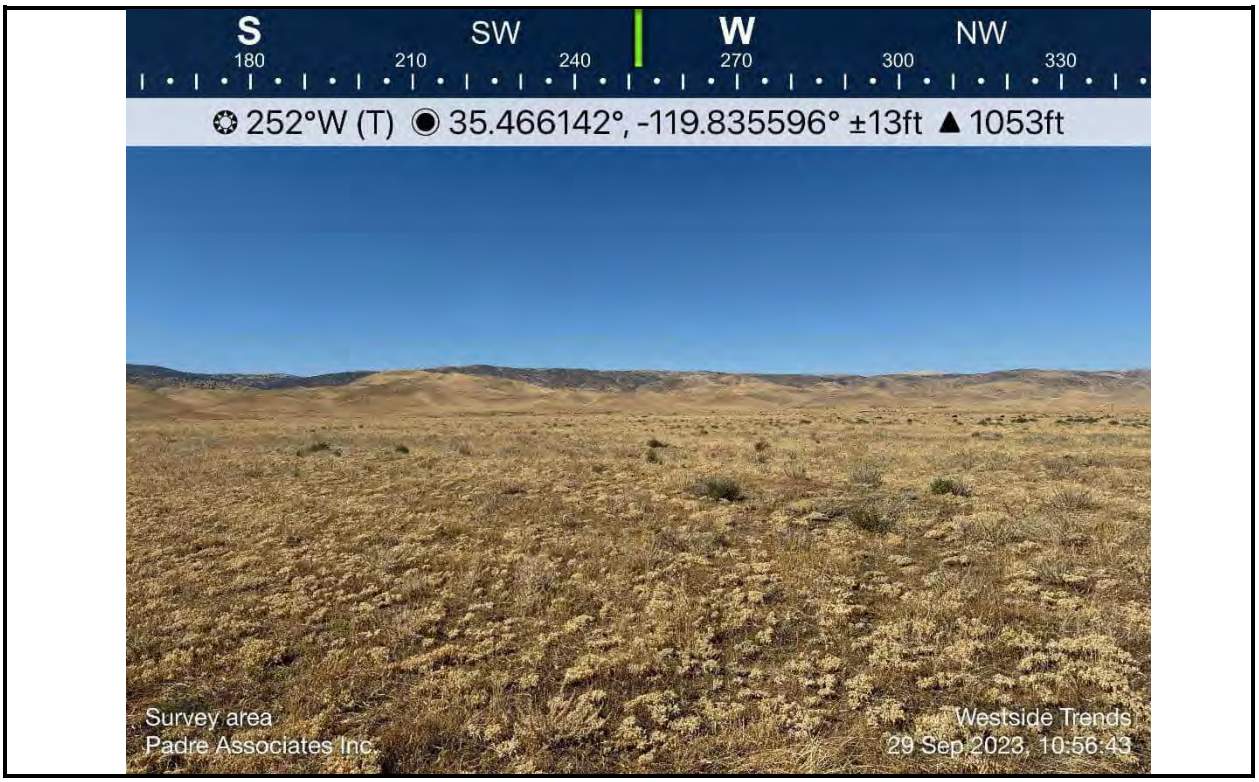


Photo 1. Grassland habitat in the BNLL survey area for the Bidr Westside Trend Project. Coordinates are in NAD83.



Photo 2. Grassland habitat in the BNLL survey area for the Bidr Westside Trend Project. Coordinates are in NAD83.

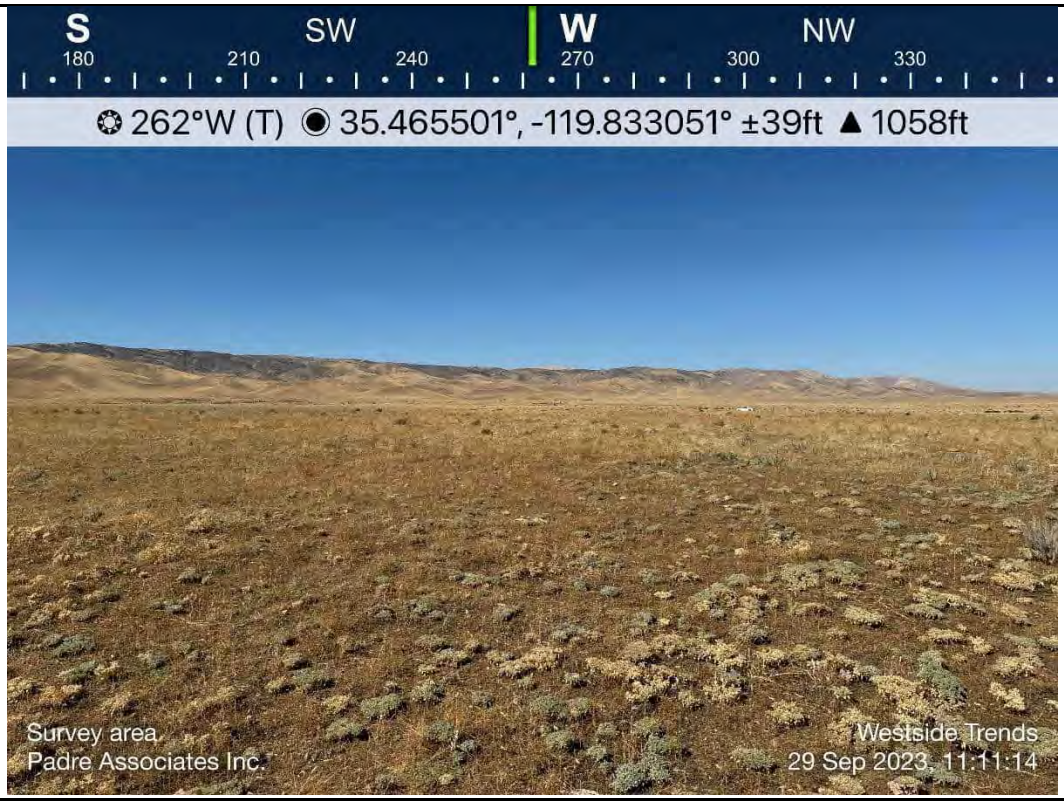


Photo 3. Grassland habitat in the BNLL survey area for the Bidr Westside Trend Project. Coordinates are in NAD83.



LEGEND:

BNLL Survey Area

MAP EXTENT:



Source: Esri Online Imagery Basemap, County of Kern
Coordinate System:NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

0 125 250
FEET

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: WESTSIDE TRENDS PROJECT
KERN COUNTY, CA

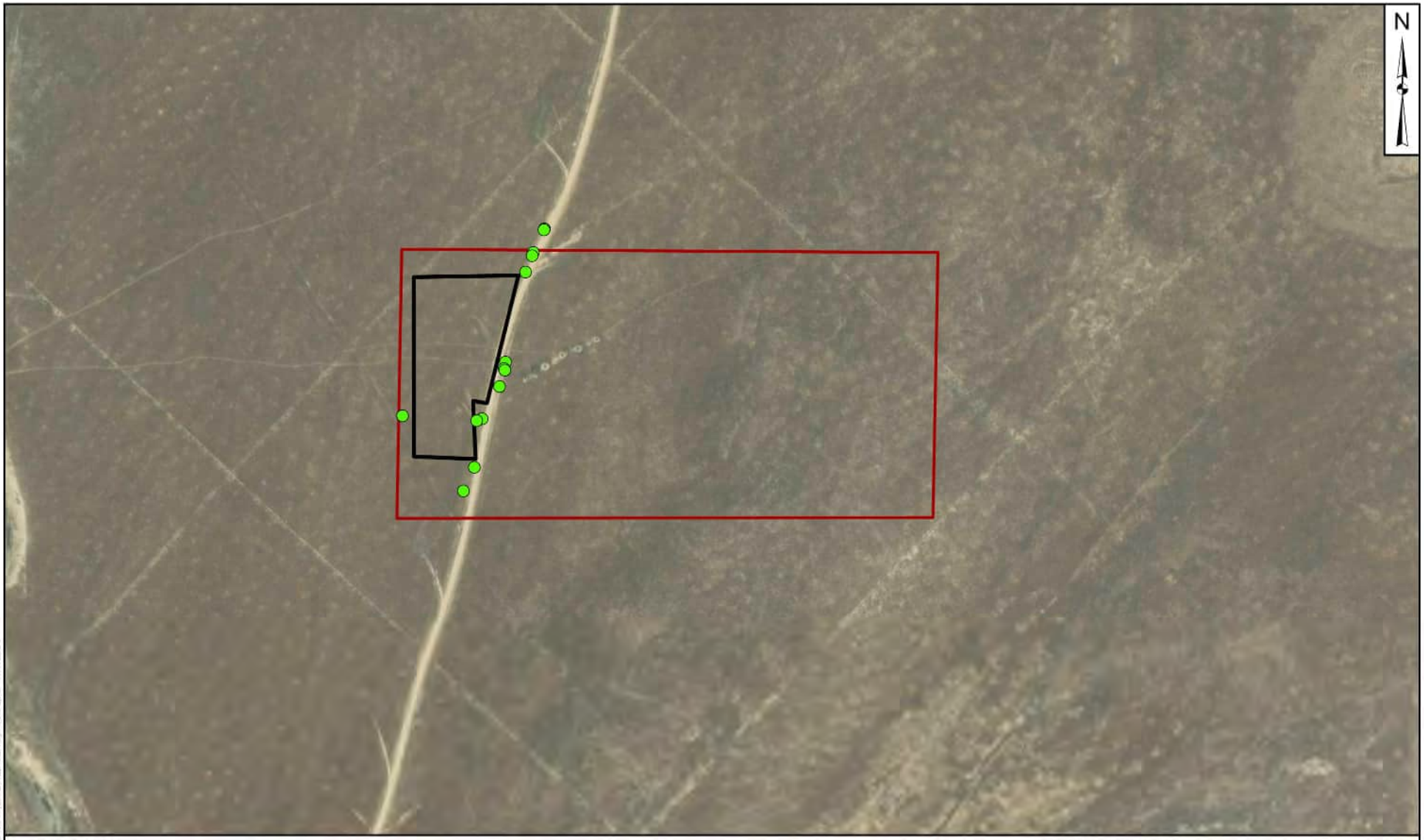
PROJECT NUMBER: 2302-0472

DATE: October 2023

2023 BIDR 20 ACRE BNLL SURVEY AREA

FIGURE 1

Z:\GIS Projects\GIS Maps\Map Projects\Westside Trend Project\BNLL Survey Area.aprx 10/4/2023



LEGEND:

- Small Mammalian Burrow
- BNLL Survey Area
- Exclusion Fence

MAP EXTENT:



Source: Esri Online Imagery Basemap, County of Kern
Coordinate System:NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

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padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: WESTSIDE TRENDS PROJECT KERN COUNTY, CA

PROJECT NUMBER: 2302-0472

DATE: November 2023

2023 BIDR 20 ACRE BNLL EXCLUSION FENCE AREA

FIGURE 2

Z:\GIS Projects\GIS Maps\Map Projects\Westside Trend Project\BNLL Survey Area.aprx 11/7/2023

Appendix C Cultural Resources Report

DRAFT

Appendix C Cultural Resources Report

PHASE I ARCHAEOLOGY STUDY, WESTSIDE TREND PROJECT

KERN COUNTY, CALIFORNIA

Project No. 2302-0472

Prepared for:

Bidr, LLC.
19100 7th Standard Road
McKittrick, California 93251

Prepared by:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, California 93401

SEPTEMBER 2023

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION

Authors: Rachael J. Letter, M.S., RPA and Christopher J. Letter, B.A.

Consulting firm: Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, California 93401
(805) 786-2650

Report Date: September 2023

Report Title: Phase I Archaeological Study, Westside Trend Project, Kern County, California

Prepared for: Bidr, LLC.
19100 7th Standard Road
McKittrick, CA 93251

Prepared by: Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, California 93401
(805) 786-2650

Padre Project No: 2302-0472

U.S.G.S. Quad(s): Carneros Rocks

Key words: Kern County, Phase I Archaeological Study, McKittrick, Southern Valley Yokuts

EXECUTIVE SUMMARY

At the request of Bidr, LLC (Bidr), Padre Associates, Inc. (Padre), has completed a Phase I Archaeological Study in support of the Westside Trend Project (Project) located adjacent to Carneros Creek Oil Field, Kern County, California (Project site). The scope of this document includes an archaeological records search, Sacred Lands File search, and a Phase I pedestrian survey as required by the California Geologic Energy Management Division (CalGEM). CalGEM has determined that the issuance of well drilling permits would be a discretionary action subject to the California Environmental Quality Act (CEQA). The proposed Project involves the drilling and potential development of one exploratory well. The Phase I archaeological study has assessed the Project site for potential archaeological resources and determine project impacts.

The records search did not reveal any previously recorded resources within the Project site or 0.25-mile search radius. Padre Staff Archaeologist Christopher J. Letter conducted a pedestrian survey of the Project site on June 29, 2023 and did not identify any cultural resources within the Project site.

Proposed Project impacts will not affect cultural resources and no further archaeological study or monitoring is warranted. Padre recommends that the Project proceed as planned. A change in scope (i.e. increase area of disturbance beyond the Project site), will require additional cultural resources surveys. In the event cultural resources are encountered during the proposed Project, Padre recommends all construction activities cease within a 100-foot radius. Work will resume once an archaeologist who meets the U.S. Secretary of the Interior's Historic Preservation Professional Qualification Standards for Archaeology has assessed the find and identified and implemented appropriate mitigation measures.

One copy of this report will be submitted to the South San Joaquin Valley Information Center (SSJVIC) at California State University, Bakersfield. A copy of all field notes is on file at Padre's office in San Luis Obispo, California.

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APPENDICES

Appendix A: Records Search Results
Appendix B: Response from Native American Heritage Commission

1.0 INTRODUCTION

At the request of Bidr, LLC (Bidr), Padre Associates, Inc. (Padre), has completed a Phase I Archaeological Study in support of the Westside Trend Project (Project) located adjacent to Carneros Creek Oil Field, Kern County, California (Project site). The scope of the study includes an archaeological records search, a Sacred Lands File Search, and a pedestrian survey.

Padre completed the study pursuant to the California Environmental Quality Act (CEQA) Guidelines. CEQA requires lead agencies to evaluate proposed projects for their potential to impact archaeological resources (Public Resources Code Section 21082, 21083.2, and 21084.1, and California Code of Regulations 15064.5). According to the CEQA Guidelines, "historical resources" include buildings, structures, objects, districts, or sites that may possess prehistoric or historical archaeological, architectural, cultural, or scientific importance. CEQA states that if a project will have a significant effect on important cultural resources, then alternative plans or mitigation measures need to be developed. However, only important cultural resources need to be considered in the mitigation plans.

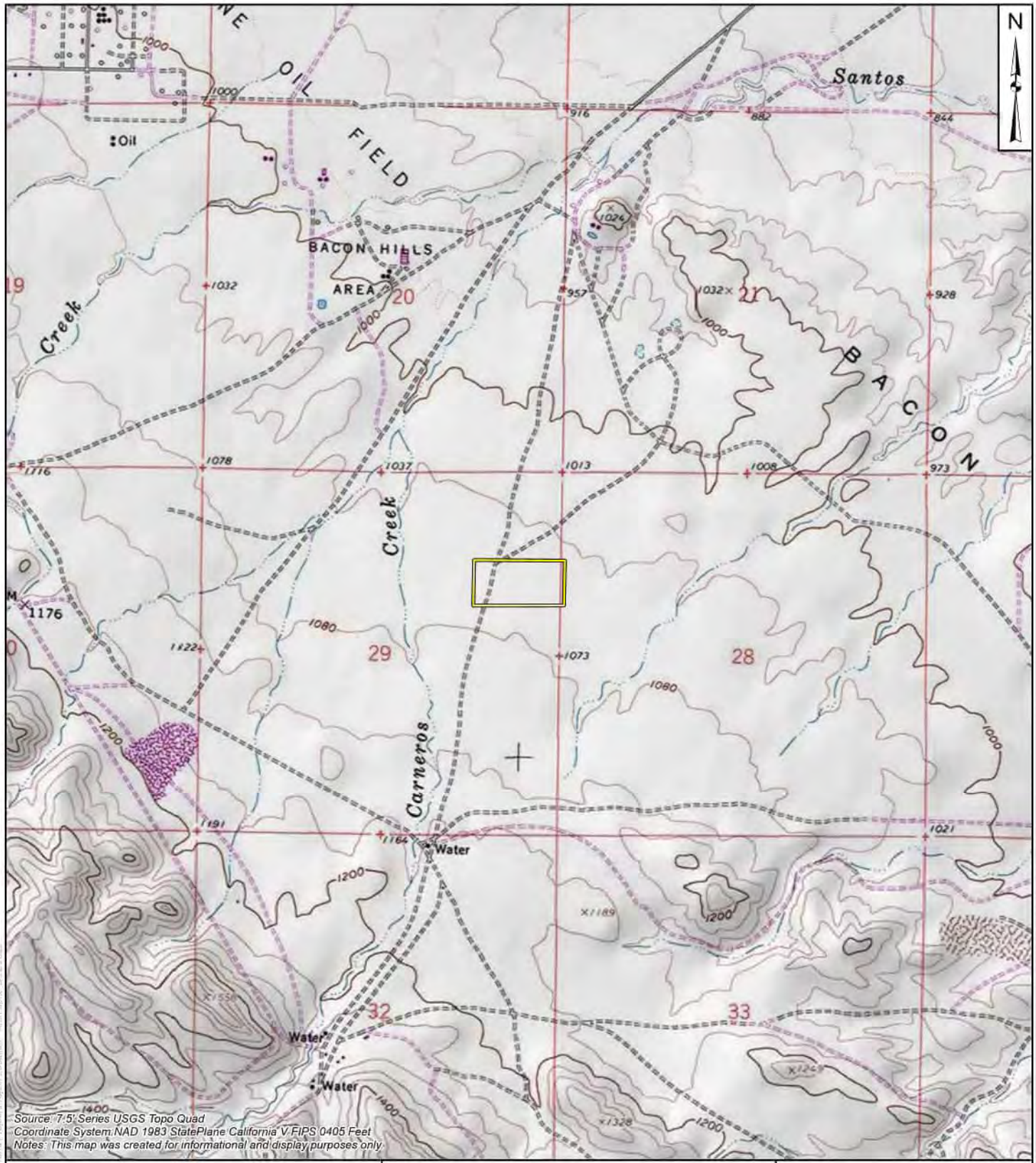
On June 29, 2023, Padre Staff Archaeologist Christopher J. Letter, B.A. completed the pedestrian survey. Senior Archaeologist Rachael J. Letter, M.S., RPA, who exceeds the U.S. Secretary of the Interior's Historic Preservation Professional Qualification Standards as outlined in 36 Code of Federal Regulations (CFR) 61, served as Cultural Resources Project Manager.

The remainder of this section provides the Project description and location; Section 2.0 discusses the regulatory framework; Section 3.0 provides the environmental, ethnographic and archaeological overviews for the region; Section 4.0 describes the records search results and Native American consultation; Section 5.0 presents the field methodology and survey results; Section 6.0 provides a summary and recommendations; and references are listed in Section 7.0. The records search results are located in Appendix A, and the response from the Native American Heritage Commission is provided in Appendix B.

1.1 PROJECT LOCATION AND DESCRIPTION

The Project site is located within the *Carneros Rocks, California* USGS 7.5-Minute Series topographic quadrangle map. Specifically, the Project site is located within Section 29 of Township 28 South, Range 20 East, northwest of the community of McKittrick, Kern County, California (Figure 1-1). The approximate elevation ranges from 1,047 to 1,070 feet above mean sea level. The Project site is currently an active pasture and is located 950 feet east of Carneros Creek, an intermittent stream.

The proposed Project includes the drilling and potential development of one exploratory well. The proposed Project surface disturbance will include vegetation removal and grading as needed.



Source: 7.5' Series USGS Topo Quad
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only

0 1,000 2,000
FEET
1:24,000

USGS 7.5' Quadrangle: Carneros Rocks
Legal Description: T28S, R20E, Sec.29

LEGEND:
Project Area



padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: WESTSIDE TREND PROJECT, KERN COUNTY, CA

PROJECT NUMBER: 2302-0472

DATE: June 2023

PROJECT LOCATION

FIGURE: 1-1

7_GIS Projects\GIS Maps\Map Packets\Westside Trend Project\Project Location - Aerial.aprx 6/12/2023

2.0 REGULATORY FRAMEWORK

This Phase I archaeological study complies with the California Environmental Quality Act, as amended (CEQA Public Resources Code (PRC) Section 21000 et seq.). The following regulatory framework describes the applicable state and local statutes pertaining to the protection of cultural resources.

2.1 STATE REGULATIONS

2.1.1 California Environment Quality Act

CEQA statute and guidelines include procedures for identifying, analyzing, and disclosing potential adverse impacts to historical resources, which include all resources listed in or formally determined eligible for the California Register of Historical Resources (CRHR) or local registers. CEQA further defines a "historical resource" as a resource that meets any of the following criteria:

- A resource listed in, or determined to be eligible for listing in, the CRHR;
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
- A resource identified as significant (i.e., rated 1-5) in a historical resource survey meeting the requirements of Public Resource Code Section 5024.1(g) (DPR Form 523), unless the preponderance of evidence demonstrates that it is not historically or culturally significant; or
- Any object, building, structure, site, area, place, record or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the CRHR (CEQA Guidelines Section 15064.5).

2.1.2 California Register of Historical Resources

CRHR Criteria of Evaluation. The CRHR is a listing of California resources that are significant within the context of California's history. The CRHR is a state-wide program of similar scope to the NRHP. In addition, properties designated under municipal, or county ordinances are eligible for listing in the CRHR. A historic resource must be significant at the local, state, or national level under one or more of the following criteria that are defined in the California Code of Regulations Title 14, Chapter 11.5, Section 4850:

- It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
- It is associated with the lives of persons important to local, California, or national history; or

- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
- It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

2.1.3 Assembly Bill 52

Assembly Bill (AB) 52, which became law on January 1, 2015, provides for consultation with California Native American tribes during the CEQA process, and equates significant impacts to "tribal cultural resources" with significant environmental impacts. PRC Section 20174 defines tribal cultural resources as:

> "Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe and are one of the following:
>
> A. Included or determined to be eligible for inclusion in the CRHR;
>
> B. Included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1; or
>
> C. A resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1 for the purposes of this paragraph, the lead CEQA agency shall consider the significance of the resource to a California Native American tribe.

The consultation provisions of the law require that within 14 days of determining that a project application is complete, or a decision by a public agency to undertake a project, the lead CEQA agency must notify tribes of the opportunity to consult on the project. California Native American tribes must be recognized by the Native American Heritage Commission (NAHC) as traditionally and culturally affiliated with the project site, and must have previously requested that the lead CEQA agency notify them of projects. Tribes have 30 days following notification of a project to request consultation with the lead CEQA agency.

The purpose of consultation is to inform the lead CEQA agency in its identification and determination of the significance of tribal cultural resources. Consultation may also include a discussion of project alternatives, significant effects, and mitigation measures, and should be undertaken in good faith by both the tribe and lead CEQA agency. If a project is determined to result in a significant impact to an identified tribal cultural resource, the consultation process must occur and conclude prior to adoption of any environmental document (PRC Sections 21080.3.1, 21080.3.2, 21082.3).

2.2 KERN COUNTY GENERAL PLAN

2.2.1 Section 1.10.3, Policy 25

This section of the General Plan provides that the County of Kern will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors. There are five implementing measures (K through O).

Included in these is a measure that states that the County Planning Department will evaluate the necessity for the involvement of a qualified Native American monitor for grading and other construction activities on CEQA projects.

2.3 REGULATIONS CONCERNING DISCOVERY OF HUMAN REMAINS

California PRC §5097.98 (Notification of Native American human remains, descendants; disposition of human remains and associated grave goods) mandates that the lead agency adhere to the following regulations when a project results in the identification or disturbance of Native American human remains:

(a) Whenever the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make their recommendation within 48 hours of their notification by the Native American Heritage Commission. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

(b) Whenever the commission is unable to identify a descendant, or the descendant identified fails to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendant, and the mediation provided for in subdivision (k) of Section 5097.94 fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.

(c) Notwithstanding the provisions of Section 5097.9, the provisions of this section (including those actions taken by the landowner or his or her authorized representative to implement this section), and any action taken to implement an agreement developed pursuant to subdivision (l) of Section 5097.94, shall be exempt from the requirements of the California Environmental Quality Act (Division 13, commencing with Section 21000).

(d) Notwithstanding the provisions of Section 30244, the provisions of this section (including those actions taken by the landowner or his or her authorized representative to implement this section), and any action taken to implement an agreement developed pursuant to subdivision (1) of Section 5097.94 shall be exempt from the requirements of the California Coastal Act of 1976 (Division 20, commencing with Section 30000).

3.0 NATURAL AND CULTURAL OVERVIEW

This section provides background information pertaining to the natural and cultural context of the Project site. The contexts describe the relationship of the Project site within the larger natural environment, which in turn provides information regarding the natural resources that indigenous groups accessed for subsistence and land use patterns for the prehistoric period.

3.1 ENVIRONMENTAL SETTING

The Project site is located on an alluvial fan to the east of the Temblor Range, an uplifted block of marine sediments deposited 10 million years ago and to the west of the Bacon Hills. Tectonic deformation in this region has created a series of low ridges separated by valleys, including the McKittrick Valley, just south of the Project site (URS, 2012). Specifically, the US Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey indicates that there are two soil types within the Project site. The Panoche soils series consists of very deep, well drained soils that formed in loamy calcareous alluvium from sedimentary rock on alluvial fans and flood plains. The Milham soils series consists of very deep, well drained soils that formed in mixed calcareous alluvium weathered from granitic and sedimentary rock on alluvial fans, plains, low terraces and fan remnants.

The climate of the Project site is hot and arid with an average annual rainfall of five to six inches (Culleton et al., 2005). Vegetation consists of the Valley Saltbush Scrub and Non-Native Grassland communities including native saltbush (*Atriplex polycarpa*) and spiny saltbush (*Atriplex spinifera*). Non-native vegetation such as oats (*Avena barbata*) and tumbleweed (*Kali tragus*) are also present (Miles and Goudey, 1998; URS, 2012).

3.2 ARCHAEOLOGICAL CONTEXT

Archaeological investigations in the southern San Joaquin Valley began with the University of California Archaeological Survey at the turn of the twentieth century. The survey focused on documenting and collecting artifacts from archaeological sites in Kern County, including the Elk Hills, but did not establish a meaningful temporal framework (Gifford and Schenck, 1926). Excavations and research completed between the 1930s and the 1970s, focused on the former shorelines of Buena Vista and Tulare lakes, and a variety of cultural chronologies were proposed for the San Joaquin Valley. More recent excavation, driven by regulatory and project development requirements, have defined five broad temporal periods for the southern San Joaquin Valley: Paleo-Indian, Early Holocene, Middle Holocene, Late Holocene, and Protohistoric (Hartzell, 1992; URS, 2012).

3.2.1 Paleo-Indian Period (c. 25,000 – c. 12,000 B.P.)

The Paleo-Indian period represents the earliest human occupation in North America, beginning no earlier than 40,000 years before present (B.P.) and perhaps as recently as 25,000 to 20,000 B.P. Small groups of highly mobile individuals hunted (now extinct) megafauna and small animals and gathered berries and seeds (Hartzell, 1992). Artifacts were mostly portable and groundstone tools are rare (Alcock and Parr, 1997).

The Tulare Lake basin, located approximately 35 miles north of the Project site in Fresno County, provides evidence of human occupation during the Paleo-Indian Period in the San

Joaquin Valley. The Witt Site (Riddell and Olsen, 1969) produced over 275 basally thinned and fluted concave base projectile points, similar to the Clovis type (c. 13,200 to 12,900 B.P.). Obsidian hydration sourcing of these projectile points reveal they were manufactured from material collected from the Napa Valley and the eastern Sierras indicating trade with other groups (Garfinkel et al., 2008).

3.2.2 Early Holocene Period (c. 12,000 – 7,000 B.P.)

Mobility decreased during the Early Holocene Period. Small groups lived in camps near lakes and streams and subsistence strategies focused more on small animals and lacustrine resources (Hartzell, 1992). Distinct artifacts from this period consist of groundstone atlatls, crescents, scraper tools, and projectile point types include Lake Mojave, Silver Lake, and Pinto series. Milling implements are absent from the archaeological record (Siefkin, 1999).

3.2.3 Middle Holocene Period (c. 7,000 – c. 4,000 B.P.)

Cultural changes during the Middle Holocene Period are thought to be a response to a shift in climate towards warm, dry conditions and receding lakeshores (Rosenthal et al., 2007). Sites are commonly found on rises along the margins of lakes (Hartzell, 1992) and burials are extended with no grave goods (Warren and McKusick, 1959). Diagnostic artifacts include Elko and Pinto series projectile points, flake scrapers, charmstones, and the introduction of milling stones. Trade items such as marine shell beads and ornaments, worked bone, and steatite items also become more common (Hartzell, 1992).

3.2.4 Late Holocene Period (c. 4,000 – 500 B.P.)

Prehistoric technology and economy became markedly more complex during the Late Holocene Period. The artifact assemblage contains hopper mortars, smaller arrow-size projectile points, bone fish hooks, steatite H-shaped Fishing “reels”, and tule-covered clay ball net weights (Hartzell, 1992). Subsistence practices emphasized terrestrial resources away from lakes and marshes and become more diversified at the end of the period. The overall population grew and settled into larger village sites on knolls between ephemeral drainages (Moratto, 1984). Continuation of trade relationships is evident in the increased number of obsidian items, steatite bowls, and marine shell ornaments (Wallace, 1971).

3.2.5 Protohistoric Period (c. 500 – c. 150 B.P.)

The Protohistoric Period correlates with the historical Yokuts occupation of the San Joaquin Valley until sustained European occupation circa A.D. 1850 (100 B.P.). Protohistoric sites contain decorated baked-clay objects, triangular Cottonwood series projectile points, elaborate bone tools, bowl-hopper mortars, and increased ceremonial items (e.g. whistles, pipes). Use of asphaltum becomes abundant and communities acquire brown ware pottery from groups in the Sierra foothills (Rosenthal et al., 2007). Burials during this period are tightly flexed and contain a small amount of grave goods that increasingly include European items after A.D. 1770 (Warren and McKusick, 1959).

3.3 ETHNOGRAPHIC CONTEXT

The Project site is located within the ethnographic territory of the Southern Valley Yokuts Indians, a group which comprised at least 16 distinct linguistic dialects (Kroeber, 1925).

According to Kroeber (1925; Wallace, 1978) the Southwestern San Joaquin Valley was home to the Tulamni subgroup of Southern Valley Yokuts Indians whose main settlement, *Telúmneu*, was on the western shore of Buena Vista Lake with territory ranging west and north toward modern day McKittrick (Wallace, 1978). The closest village location to the Project site was *Wog'teu* near present-day McKittrick (Latta, 1999).

Yokuts villages were located on low mounds near major water courses and lakes. Because wood was scarce, the Yokuts constructed houses from tule, cattails, vines, and grasses. Single families lived in small, oval-shaped dwelling constructed over a shallow pit. Communal houses, holding 10 or more families, were rectangular shaped with a wooden pole frame and individual spaces demarcated by walls of tule mats. Animal skins were also used in both structure types to protect against the elements. Other village structures included granaries, sweathouses, and semi-subterranean halls for dance and gatherings (Wallace, 1978).

The Yokuts subsistence strategies focused on fishing, hunting waterfowl, and collecting shellfish, seeds, and roots. Plant foods played a key part in their diet; the most important resource was tule, whose roots and seeds were eaten. Acorns were not readily available and the Tulamni often traded with other groups for acorn products. The Yokuts also used tule reeds to make woven baskets, boats, and hunting blinds and coated these items with a thin layer of asphaltum (harvested from natural tar seeps) to make them watertight (Wallace, 1978).

The Southern Valley Yokuts grouped their families into patrilineal totemic lineages in which a specific animal represented the father's lineage and was revered within the family unit. Positions of tribal authority, ceremonial duties, and titles (such as chief) were usually passed from father to son. Other individuals within the tribe (e.g. shamans, ritual specialists) earned their position through personal experience and prophetic dreams (Kroeber, 1925; Wallace, 1978).

The annexation of California by the United States brought numerous Americans into the San Joaquin Valley. Those who did not find their fortune in the gold mines stayed to pursue farming and raise livestock. By 1851, the Southern Valley Yokuts were forced to relinquish their lands to the United States for reservations and payments in goods; however, the treaty was never ratified. Eventually, the Tule River Reservation was established near Porterville in 1873 and the Santa Rosa Rancheria was established near Lemoore in 1921 (Reid, 1996). Both reservations remain open and encourage the preservation of the Southern Valley Yokuts culture.

3.4 HISTORIC PERIOD CONTEXT

3.4.1 Mission Period (A.D. 1769 – 1821)

The Southern Valley Yokuts first encountered the Spanish when Pedro Fages entered the San Joaquin Valley in 1772 (Wallace, 1978). Fages encountered a Yokuts village (probably *Telúmneu*) on the southwestern shore of Buena Vista Lake and gave the lake and surrounding area the name Buena Vista (Hoover et al., 1966). Four years later, Franciscan Father Francisco Garcés was the first European to officially contact the tribe on behalf of the Spanish crown (Galvin, 1965).

During the early 1800s, the Southern San Joaquin Valley became a haven for escaped neophytes, who introduced the non-missionized populations to European practices. The Yokuts became excellent horseback riders and began stealing horses from the mission and rancho herds

(Cook, 1962; Wallace, 1978). A few of the Yokuts, including individuals from the Tulamni tribe, settled at the Soledad, San Luis Obispo, San Antonio and San Juan Bautista missions; however, no single tribe of Yokuts ever became missionized (Wallace, 1978).

3.4.2 Rancho Period (A.D. 1821 – 1848)

Mexico gained its independence from Spain in 1821 and the Secularization Act of 1833 ended the Catholic Church's control of large estates associated with the missions and presidios in Alta California. The new Mexican government granted ranchos to Mexican and foreign settlers, who mainly used the land for grazing sheep and cattle (Hackel, 1998; Lech, 2004). Most of the ranchos were located along the coast; however, a few were located in the San Joaquin Valley, such as Rancho San Emigdio (approximately 31 miles south of the Project site). Rancheros organized campaigns into the valley to retrieve stolen livestock and capture slaves. A fur trapping party, led by Jedediah Smith, traveled through the San Joaquin Valley in 1827, and spread malaria among the Yokuts tribes. A series of epidemics between 1833 and 1846 reduced the Yokuts population by approximately 75 percent (Cook, 1955; Wallace, 1978).

3.4.3 American Period (A.D. 1848 - Present)

The United States took possession of Alta California following the signing of the Treaty of Guadalupe Hidalgo in 1848, and California became a free and undivided state in 1850 as a condition of the Compromise of 1850. Kern County was organized from portions of Los Angeles and Tulare counties in 1866. It was named after the Kern River, which was named for Edward M. Kern, the topographer of the Fremont expedition of 1845-46 (Robinson, 1961).

The discovery of gold at Sutter's Mill in northern California encouraged prospectors to search the rest of the state for new strikes. In the 1860s, agriculture developed in the Central Valley to supply the growing number of miners and mining towns in the region. The San Joaquin Valley became prime agricultural land due to the ready availability of irrigation water and native grasslands. Colonel Thomas Baker founded a small agricultural settlement along the Kern River in 1861 that became the City of Bakersfield. With the arrival of the Southern Pacific Railroad in 1873, Bakersfield became the primary market and transportation hub for the valley (Hoover et al., 1966; Robinson, 1961). Unfortunately, industrialized agriculture drained the Buena Vista and Kern lakebeds and surrounding tule swamps by the end of the nineteenth century.

Another industry vital to Kern County is oil production. Organized in 1864, the Buena Vista Petroleum Company built a kerosene refinery at the foot of the Temblor Range and operated until April 1867, when transportation costs became too high (Hoover et al., 1966). Small-scale "pick and shovel" oil exploration and development continued in the region, and asphalt deposits from the McKittrick area were mined for roofing and paving material during the 1880s (Jackson et al., 2003). The opening of rail lines into the McKittrick and Midway Valleys in 1893 and 1900, respectively, allowed for large-scale production (Rintoul, 1990). Boom towns appeared along the railroad lines and spurs to provide housing, supplies, and entertainment for the oil field workers. In 1896, the Klondike Oil Company drilled the first oil well in the southern San Joaquin Valley, the Shamrock gusher (San Joaquin Valley Geology, 2014). Discoveries of other substantial deposits in the Midway Sunset, Kern River, and Elk Hills fields during the early 1900s signaled the beginning of the oil boom. This development transformed western Kern County into a major oil producing region and gave rise to communities like Taft and McKittrick. Kern County remains the leading producer of oil in California (DOGGR, 2012).

4.0 BACKGROUND RESEARCH

4.1 RECORDS SEARCH METHODS

Padre ordered an archaeological records search from the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (SSJVIC- CHRIS) at the California State University, Bakersfield on June 15, 2023. The records search included a review of all recorded historic-era and prehistoric archaeological sites within the Project site and a 0.25-mile radius, as well as a review of known cultural resource surveys and technical reports. Padre received the results on June 26, 2023.

During the records search, the following sources were consulted:

- SSJVIC base maps, USGS 7.5-minute series topographic quadrangles for the Project site, and other historic maps;
- Pertinent survey reports and archaeological site records were examined to identify recorded archaeological sites and historic-period built-environment resources (such as buildings, structures, and objects) within or immediately adjacent to the Project site; and
- The California Department of Parks and Recreation's California Inventory of Historic Resources (1991) and the Office of Historic Preservation's Historic Properties Directory (2007), which combines cultural resources listed on the California Historical Landmarks, California Points of Historic Interest, and those that are listed in or determined eligible for listing in the NRHP or the CRHR.

4.2 RECORDS SEARCH RESULTS

The records search did not identify any cultural resources within the Project site or within a 0.25-mile radius. Additionally, the records search indicates that the Project site has not been previously studied and no cultural resource investigations have been completed within a 0.25-mile radius.

4.3 SACRED LANDS FILE SEARCH

On June 15, 2023, Padre emailed a request for a Sacred Lands File search to the NAHC to request information about sacred or traditional cultural properties that may be located within the Project site (Appendix B). A search of the Sacred Lands file housed at the NAHC did not indicate the presence of Native American cultural resources within the Project site. On July 23, 2023, the NAHC provided a list of local groups and individuals to contact for further information regarding local knowledge of sacred lands. The response from the NAHC is attached as Appendix B and should be forwarded to the CEQA Lead Agency, which will conduct Native American consultation pursuant to Public Resources Code (PRC) § 21080.3.1.

5.0 FIELD SURVEY METHODS AND RESULTS

Padre Staff Archaeologist Christopher J. Letter completed the pedestrian survey on June 29, 2023. The archaeologist examined the Project site with parallel transects spaced at 10-meter intervals where not constrained by dense vegetation. The survey area was documented with color digital photographs.

The Project site consisted of a nearly level field currently used for grazing. No structures are present and an unimproved dirt road bisects the Project site (Figure 5-1, Figure 5-2, and Figure 5-3). Ground surface visibility ranged from thirty to 100 percent with dense vegetation accounting for the areas of lesser visibility. Vegetation consisted of seasonal grasses, wildflowers and weeds. Soils observed during the survey consisted of a clay loam with less than 10 percent gravels and small to large cobbles of various rock types including sandstone. No cultural resources were observed during the survey.



Figure 5-1. Overview of Project site, facing southwest



Figure 5-2. Overview of Project site, facing north



Figure 5-3. Overview of Project site, facing east

6.0 CONCLUSIONS AND RECOMMENDATIONS

Padre has completed a Phase I Archaeological Study in support of the Westside Trend Project. The following recommendations are intended to assist planners minimize the impact of future construction activities on known cultural resources.

The records search did not identify any cultural resources and the pedestrian survey was negative for cultural resources.

Proposed Project impacts will not affect cultural resources and no further archaeological study or monitoring is warranted. Padre recommends that the Project proceed as planned. A change in scope (i.e. increase area of disturbance beyond the Project site), will require additional cultural resources surveys. In the event cultural resources are encountered during the proposed Project, Padre recommends all construction activities cease within a 100-foot radius. Work will resume once an archaeologist who meets the U.S. Secretary of the Interior's Historic Preservation Professional Qualification Standards for Archaeology has assessed the find and identified and implemented appropriate mitigation measures.

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APPENDIX A

RECORDS SEARCH RESULTS

California Historical Resources Information System



Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

6/26/2023

Rachael Letter
Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, CA 93401

Re: 2302-0472
Records Search File No.: 23-229

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Carneros Rocks USGS 7.5' quad. The following reflects the results of the records search for the project area and the 0.25 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☐ custom GIS maps ☒ GIS data

Resources within project area:	None
Resources within 0.25 mile radius:	None
Reports within project area:	None
Reports within 0.25 mile radius:	None

Resource Database Printout (list):	☐ enclosed ☒ not requested ☐ nothing listed
Resource Database Printout (details):	☐ enclosed ☐ not requested ☒ nothing listed
Resource Digital Database Records:	☐ enclosed ☒ not requested ☐ nothing listed
Report Database Printout (list):	☐ enclosed ☐ not requested ☒ nothing listed
Report Database Printout (details):	☐ enclosed ☒ not requested ☐ nothing listed
Report Digital Database Records:	☐ enclosed ☒ not requested ☐ nothing listed
Resource Record Copies:	☐ enclosed ☐ not requested ☒ nothing listed
Report Copies:	☐ enclosed ☐ not requested ☒ nothing listed
OHP Built Environment Resources Directory:	☐ enclosed ☒ not requested ☐ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed ☐ not requested ☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed ☒ not requested ☐ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical-bridges-tunnels

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC; please see http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

Shipwreck Inventory: Not available at SSJVIC; please see https://www.slc.ca.gov/shipwrecks/

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Jeremy E David
Assistant Coordinator

APPENDIX B

RESPONSE FROM THE NATIVE AMERICAN HERITAGE COMMISSION

NATIVE AMERICAN HERITAGE COMMISSION

ACTING CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Vacant

COMMISSIONER
Vacant

COMMISSIONER
Vacant

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

July 23, 2023

Rachael Letter
Padre Associates, Inc.

Via Email to: rletter@padreinc.com

Re: Westside Trend Project, Kern County

Dear Ms. Letter:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela
Cultural Resources Analyst
Attachment

Native American Heritage Commission
Native American Contact List
Kern County
7/23/2023

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Kern	Kitanemuk & Yowlumne Tejon Indians	N	Delia Dominguez, Chairperson	115 Radio Street Bakersfield, CA, 93305	(626) 339-6785		2deedominguez@gmail.com	Kitanemuk Southern Valley Yokut	Kern,Los Angeles	
	Salinan Tribe of Monterey, San Luis Obispo Counties	N	Patti Dunton, Tribal Administrator	8270 Morro Rd. Atascadero, CA, 93422	(805) 464-2650		info@salinantribe.com	Salinan	Fresno,Kern,Kings,Monterey,San Benito,San Luis Obispo	6/6/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Leo Sisco, Chairperson	P.O. Box 8 Lemoore, CA, 93245	(559) 924-1278	(559) 924-3583		Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	
	Santa Ynez Band of Chumash Indians	F	Kelsie Shroll, Elders' Council Administrative Assistant	100 Via Juana Road Santa Ynez, CA, 93460	(805) 245-5403		kshroll@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	7/6/2023
	Santa Ynez Band of Chumash Indians	F	Nakia Zavalla, Tribal Historic Preservation Officer	100 Via Juana Road Santa Ynez, CA, 93460			nzavalla@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	7/6/2023
	Santa Ynez Band of Chumash Indians	F	Sam Cohen, Government & Legal Affairs Director	100 Via Juana Road Santa Ynez, CA, 93460			scohen@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	7/6/2023
	Santa Ynez Band of Chumash Indians	F	Wendy Teeter, Cultural Resources Archaeologist	100 Via Juana Road Santa Ynez, CA, 93460	(805) 325-8630		wteeter@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	7/6/2023
	Tejon Indian Tribe	F	Candice Garza, CRM Scheduler	4941 David Road Bakersfield, CA, 93307	(661) 345-0632		cgarza@tejonindiantribe-nsn.gov	Kitanemuk	Kern	4/11/2023
	Tule River Indian Tribe	F	Kerri Vera, Environmental Department	P. O. Box 589 Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	kerri.vera@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	7/22/2016
	Tule River Indian Tribe	F	Joey Garfield, Tribal Archaeologist	P. O. Box 589 Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	joey.garfield@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	7/22/2016
	Tule River Indian Tribe	F	Neil Peyron, Chairperson	P.O. Box 589 Porterville, CA, 93258	(559) 781-4271	(559) 781-4610	neil.peyron@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	
	Xolon-Salinan Tribe	N	Karen White, Chairperson	P.O. Box 7045 Spreckels, CA, 93962	(831) 455-1012		xolon.salinan.heritage@gmail.com	Salinan	Fresno,Kern,Kings,Monterey,San Benito,San Luis Obispo,Santa Barbara	4/3/2023
	Xolon-Salinan Tribe	N	Penny Hurt, Cultural Preservation Administrator	P.O. Box 7045 Spreckels, CA, 93962	(805) 453-3675		phurt6700@gmail.com	Salinan	Fresno,Kern,Kings,Monterey,San Benito,San Luis Obispo,Santa Barbara	4/3/2023
	yak tityu tityu yak tilhini – Northern Chumash Tribe	N	Mona Tucker, Chairperson	660 Camino Del Rey Arroyo Grande, CA, 93420	(805) 748-2121		olivas.mona@gmail.com	Chumash	Kern,San Luis Obispo,Santa Barbara	5/30/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Westside Trend Project, Kern County.

Record: PROJ-2023-003622
Report Type: List of Tribes
Counties: Kern
NAHC Group: All

Appendix D Noise Report

DRAFT

Appendix D Noise Report

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EnviroTech Consultants, Inc.

5400 Rosedale Highway
Bakersfield, CA 93308
(661) 377-0073

NOISE STUDY REPORT

BIDR, LLC
BIDR Exploratory Well

ADJACENT TO MCDONALD ANTICLINE AND CARNEROS CREEK OIL FIELDS KERN COUNTY, CALIFORNIA APN# 085-170-09

December 1, 2023

Prepared for:

BIDR, LLC

Prepared By:

EnviroTech Consultants, Inc.
5400 Rosedale Highway
Bakersfield, CA 93308

NOISE STUDY REPORT

BIDR, LLC

EXPLORATORY WELL

35.465456628 LATITUDE, -119.836119926 LONGITUDE

APN# 085-170-09

CEQA INITIAL STUDY

DECEMBER 2023

Prepared By: Nicholas Diercks, Sr. Environmental Specialist Date: December 1, 2023

Phone Number (661) 345-8166
Email ndiercks@envirotechteam.com
Office Name EnviroTech Consultants, Inc.

District/Region Bakersfield, CA

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ATTACHEMENTS

ATTACHMENT 1 ACOUSTICAL TERMINOLOGY

ATTACHMENT 2 EXAMPLES OF SOUND LEVELS

ATTACHMENT 3 SITE MAP

ATTACHMENT 4 RCNM NOISE MODELING RESULTS

SECTION 1 – INTRODUCTION

EnviroTech Consultants, Inc. (EnviroTech) has prepared this Noise Study Report on behalf of BIDR, LLC, as required for the California Environmental Quality Act Initial Study for an exploratory well.

Attachment 1 provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Attachment 2 provides typical A-weighted sound levels for common noise sources.

SECTION 2 – STUDY AND RESULTS

2.1 Scope

This Noise Study is to identify potential increased noise level from construction and drilling activities at sensitive receptors and, if necessary, noise abatement to mitigate impacts. EnviroTech conducted an analysis of the noise impacts utilizing the Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide and US EPA Protective Noise Levels. Noise modeling was completed using the Federal Highway Administration's Roadway Construction Noise Model (RCNM).

2.2 Location

The well is located on Assessor's Parcel Number (APN) 085-170-09 in an active (A) agricultural area that includes one sensitive receptor within 8,000 feet of the project location. The well is located approximately 8 miles west of the intersection of Highway 33 and Seventh Standard Road. A residence is located approximately 7,700 feet south of the well. This is the only sensitive receptor within 8,000 feet of the project location. The locations of the project site and receptor are provided in Attachment 3.

2.3 Noise Study

BIDR proposes to perform construction activities to prepare a well pad, drill a well, and build a production facility at the project site. Because the sensitive receptors are located within 7,900 feet of the project site additional noise analysis is required.

Potential noise impacts were modeled using a 7,700-foot distance; assuming ambient noise levels of 50 dBA (7:00 AM to 10:00 PM) and nighttime noise of 40 dBA (10:00 PM to 7:00 AM) (consistent with rural environments [USEPA 1978]) corresponding to a Day-Night Average Sound Level (Ldn) of 50 dBA (i.e., equivalent sound level for a 24-hour period with an additional 10 dBA imposed on the equivalent sound levels for night time hours of 10:00 p.m. to 7 :00 a.m.); and the Federal Transit Authority's construction noise methodology. Accordingly, Table 1 lists equipment expected to be used during each phase along

with the typical expected equipment noise levels and usage factors adapted from the FHWA Roadway Construction Noise Model User's Guide. The User's Guide provides the most recent comprehensive assessment of noise levels from construction equipment. Considering standard attenuation of noise with increased distance from a noise source, the noise generated during each phase was propagated out to 7,700 feet to estimate the maximum noise levels resulting from the proposed Project. The equipment and closest receptor were entered in the RCNM software to obtain the results summarized in Table 1 for each phase. The detailed noise analysis results of each phase is included in Attachment 4.

Table 1

Project Activity	Equipment	Quantity	Daytime Operating Hours	Nighttime Operating Hours	Acoustical Usage Factor (%)[1]	Typical Equipment L_{max} (dBA) at 50 feet from Source[1]	Calculated L_{eq} (dBA)	Calculated L_{dn} (dBA)
Grading	Dozer	1	8.3	0	40	81.7	33.9	
	Grader	1	8.3	0	40	83.4	35.7	
	Excavator	1	8.3	0	40	80.7	33.0	
	Loader	1	8.3	0	40	79.1	31.4	
	Drill	1	1.7	0	20	84.4	33.6	
	Pump	1	3.3	0	50	80.9	34.2	
						Noise at 7,700 feet	**41.6**	**38.2**
Rig Setup	Forklift	2	10	0	40	79.1	31.4	
	Crane	1	10	0	16	80.6	28.8	
	Welder	2	10	0	40	74.0	26.3	
						Noise at 7,700 feet	**36.4**	**33.0**
Well Drilling Operations	Drill	1	15	9	100	84.4	40.6	
	Pump	2	15	9	100	80.9	37.1	
	Generator	6	15	9	100	80.6	36.8	
	Light Tower	6	3	9	41	80.6	33.8	
	Forklift	1	15	9	40	79.1	31.4	
	Backhoe	1	15	9	40	77.6	29.8	
	Welder	2	15	9	40	74.0	26.3	
	Crane	1	15	9	16	80.6	28.8	
						Noise at 7,700 feet	**48.4**	**54.7**
Rig Decommission	Forklift	1	10	0	40	79.1	31.4	
	Crane	1	10	0	16	80.6	28.8	
	Welder	2	10	0	40	74.0	26.3	
						Noise at 7,700 feet	**34.7**	**31.3**

Project Activity	Equipment	Quantity	Daytime Operating Hours	Nighttime Operating Hours	Acoustical Usage Factor (%)[1]	Typical Equipment L_{max} (dBA) at 50 feet from Source[1]	Calculated L_{eq} (dBA)	Calculated L_{dn} (dBA)
Facility Construction	Crane	1	4	0	16	80.6	28.8	
	Forklift	2	6	0	40	79.1	31.4	
	Backhoe	2	8	0	40	77.6	29.8	
	Welder	2	8	0	40	74.0	26.3	
						Noise at 7,700 feet	**38.0**	**34.6**

Notes:

[1] Adapted from FHWA Roadway Construction Noise Model User's Guide (FHWA 2006)

2.4 Results

The total noise levels were then compared to the maximum allowable increased noise levels at the sensitive receptor to determine whether the noise impacts from the project were significant and would require further mitigation. For locations where the ambient level is below 65 dB, noise levels from construction activities may not increase the existing ambient level at the sensitive receptor by more than 5dB and may not exceed 65 dB at the sensitive receptor. For locations where the ambient level is at or in excess of 65 dB, noise levels from construction activities may not increase the existing ambient level at the sensitive receptor by more than 1 dB.

As shown in Table 1, the Project would be in compliance with the Kern County General Plan noise level standard and during construction would be below 55 dBA Ldn at 7,700 feet from any individual Project component. Thus, the proposed Project would not increase noise levels by more than 5 dBA and the proposed Project would comply with the Kern County General Plan noise level standard at the location of the nearest sensitive receptor.

2.5 Conclusions

The mitigation measure states that noise levels cannot increase by more than 5 dB nor exceed 65 dB at the sensitive receptor. Based on the analysis conducted, the project noise levels will not exceed these limits. Therefore, no construction mitigation measures are required.

Attachment 1 – Acoustical Terminology

ACOUSTICAL TERMINOLOGY

AMBIENT NOISE LEVEL: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

DECIBEL, dB: A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

NOTE: The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

L_{max}: The maximum noise level recorded during a noise event.

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). For example, L_{10} equals the level exceeded 10 percent of the time.

ACOUSTICAL TERMINOLOGY

NOISE EXPOSURE CONTOURS: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

NOISE LEVEL REDUCTION (NLR): The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of Anoise level reduction" combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL: The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

SOUND TRANSMISSION CLASS (STC): The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

Attachment 2 – Examples of Sound Levels

EXAMPLES OF SOUND LEVELS

NOISE SOURCE	SOUND LEVEL	SUBJECTIVE DESCRIPTION
AMPLIFIED ROCK 'N ROLL •	120 dB	
JET TAKEOFF @ 200 FT •		DEAFENING
	100 dB	
BUSY URBAN STREET •		VERY LOUD
	80 dB	
FREEWAY TRAFFIC @ 50 FT •		LOUD
CONVERSATION @ 6 FT •	60 dB	
TYPICAL OFFICE INTERIOR •		MODERATE
SOFT RADIO MUSIC •	40 dB	
RESIDENTIAL INTERIOR •		FAINT
WHISPER @ 6 FT •	20 dB	
HUMAN BREATHING •		VERY FAINT
	0 dB	



Attachment 3 – Site Map


Legend
7,700 Feet
Proposed Well Location
Sensitive Receptor - Residence
Prop Well Location
7,700 Feet
Sensitive Receptor - Residence
N
Google Earth
4000 ft

Attachment 4 – RCNM Noise Modeling Results

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/11/2024
Case Description: Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Ranch House	Residential	50.0	50.0	40.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	7700.0	0.0
Gradall	No	40		83.4	7700.0	0.0
Excavator	No	40		80.7	7700.0	0.0
Front End Loader	No	40		79.1	7700.0	0.0
Pumps	No	50		80.9	7700.0	0.0
Auger Drill Rig	No	20		84.4	7700.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	37.9	33.9	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Gradall	39.6	35.7	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Excavator	37.0	33.0	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Front End Loader	35.4	31.4	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Pumps	37.2	34.2	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Auger Drill Rig	40.6	33.6	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Total	40.6	41.6	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A

BIDR, LLC Exploratory Well - Grading Phase

Time	Leq	Lmax		
12:00 AM	0.0	0.0		
1:00 AM	0.0	0.0		
2:00 AM	0.0	0.0		
3:00 AM	0.0	0.0		
4:00 AM	0.0	0.0		
5:00 AM	0.0	0.0		
6:00 AM	0.0	0.0		
7:00 AM	41.6	40.6		
8:00 AM	41.6	40.6		
9:00 AM	41.6	40.6		
10:00 AM	41.6	40.6		
11:00 AM	41.6	40.6		
12:00 PM	41.6	40.6		
1:00 PM	41.6	40.6		
2:00 PM	41.6	40.6		
3:00 PM	41.6	40.6		
4:00 PM	41.6	40.6		
5:00 PM	41.6	40.6		
6:00 PM	0.0	0.0		
7:00 PM	0.0	0.0		
8:00 PM	0.0	0.0		
9:00 PM	0.0	0.0		
10:00 PM	0.0	0.0		
11:00 PM	0.0	0.0	Ldn	38.2

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/11/2024
Case Description: Rig Setup

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Ranch House	Residential	50.0	50.0	40.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	7700.0	0.0
Forklift	No	40		79.1	7700.0	0.0
Welder / Torch	No	40		74.0	7700.0	0.0
Forklift	No	40		79.1	7700.0	0.0
Welder / Torch	No	40		74.0	7700.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	36.8	28.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Forklift	35.3	31.4	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Welder / Torch	30.2	26.3	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Forklift	35.3	31.4	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Welder / Torch	30.2	26.3	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Total	36.8	36.4	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A

BIDR, LLC Exploratory Well - Rig Setup Phase

Time	Leq	Lmax		
12:00 AM	0.0	0.0		
1:00 AM	0.0	0.0		
2:00 AM	0.0	0.0		
3:00 AM	0.0	0.0		
4:00 AM	0.0	0.0		
5:00 AM	0.0	0.0		
6:00 AM	0.0	0.0		
7:00 AM	36.4	36.8		
8:00 AM	36.4	36.8		
9:00 AM	36.4	36.8		
10:00 AM	36.4	36.8		
11:00 AM	36.4	36.8		
12:00 PM	36.4	36.8		
1:00 PM	36.4	36.8		
2:00 PM	36.4	36.8		
3:00 PM	36.4	36.8		
4:00 PM	36.4	36.8		
5:00 PM	36.4	36.8		
6:00 PM	0.0	36.8		
7:00 PM	0.0	36.8		
8:00 PM	0.0	36.8		
9:00 PM	0.0	36.8		
10:00 PM	0.0	36.8		
11:00 PM	0.0	36.8	Ldn	33.0

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/11/2024
Case Description: Well Drilling

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Ranch House	Residential	50.0	50.0	40.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Drill Rig	No	100		84.4	7700.0	0.0
Mud Pump	No	100		80.9	7700.0	0.0
Mud Pump	No	100		80.9	7700.0	0.0
Rig Generators	No	100		80.6	7700.0	0.0
Rig Generators	No	100		80.6	7700.0	0.0
Rig Generators	No	100		80.6	7700.0	0.0
Rig Generators	No	100		80.6	7700.0	0.0
Rig Generators	No	100		80.6	7700.0	0.0
Rig Generators	No	100		80.6	7700.0	0.0
Light Towers	No	50		80.6	7700.0	0.0
Light Towers	No	50		80.6	7700.0	0.0
Light Towers	No	50		80.6	7700.0	0.0
Light Towers	No	50		80.6	7700.0	0.0
Light Towers	No	50		80.6	7700.0	0.0
Light Towers	No	50		80.6	7700.0	0.0
Forklift	No	40		79.1	7700.0	0.0
Backhoe	No	40		77.6	7700.0	0.0
Crane	No	16		80.6	7700.0	0.0
Welder / Torch	No	40		74.0	7700.0	0.0
Welder / Torch	No	40		74.0	7700.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Drill Rig	40.6	40.6	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Mud Pump	37.1	37.1	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Mud Pump	37.1	37.1	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Rig Generators	36.8	36.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Rig Generators	36.8	36.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Rig Generators	36.8	36.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A

Rig Generators	36.8	36.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Rig Generators	36.8	36.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Rig Generators	36.8	36.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Light Towers	36.8	33.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Light Towers	36.8	33.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Light Towers	36.8	33.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Light Towers	36.8	33.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Light Towers	36.8	33.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Light Towers	36.8	33.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Forklift	35.3	31.4	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Backhoe	33.8	29.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Crane	36.8	28.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Welder / Torch	30.2	26.3	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Welder / Torch	30.2	26.3	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Total	40.6	48.4	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A

BIDR, LLC Exploratory Well - Well Drilling Phase

Time	Leq	Lmax		
12:00 AM	48.4	40.6		
1:00 AM	48.4	40.6		
2:00 AM	48.4	40.6		
3:00 AM	48.4	40.6		
4:00 AM	48.4	40.6		
5:00 AM	48.4	40.6		
6:00 AM	48.4	40.6		
7:00 AM	48.4	40.6		
8:00 AM	48.4	40.6		
9:00 AM	48.4	40.6		
10:00 AM	48.4	40.6		
11:00 AM	48.4	40.6		
12:00 PM	48.4	40.6		
1:00 PM	48.4	40.6		
2:00 PM	48.4	40.6		
3:00 PM	48.4	40.6		
4:00 PM	48.4	40.6		
5:00 PM	48.4	40.6		
6:00 PM	48.4	40.6		
7:00 PM	48.4	40.6		
8:00 PM	48.4	40.6		
9:00 PM	48.4	40.6		
10:00 PM	48.4	40.6		
11:00 PM	48.4	40.6	Ldn	54.8

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/11/2024
Case Description: Rig Decommission

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Ranch House	Residential	50.0	50.0	40.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	7700.0	0.0
Welder / Torch	No	40		74.0	7700.0	0.0
Welder / Torch	No	40		74.0	7700.0	0.0
Forklift	No	40		79.1	7700.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	36.8	28.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Welder / Torch	30.2	26.3	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Welder / Torch	30.2	26.3	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Forklift	35.3	31.4	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Total	36.8	34.7	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A

BIDR, LLC Exploratory Well - Rig Decommission Phase

Time	Leq	Lmax		
12:00 AM	0.0	0.0		
1:00 AM	0.0	0.0		
2:00 AM	0.0	0.0		
3:00 AM	0.0	0.0		
4:00 AM	0.0	0.0		
5:00 AM	0.0	0.0		
6:00 AM	0.0	0.0		
7:00 AM	34.7	36.8		
8:00 AM	34.7	36.8		
9:00 AM	34.7	36.8		
10:00 AM	34.7	36.8		
11:00 AM	34.7	36.8		
12:00 PM	34.7	36.8		
1:00 PM	34.7	36.8		
2:00 PM	34.7	36.8		
3:00 PM	34.7	36.8		
4:00 PM	34.7	36.8		
5:00 PM	34.7	36.8		
6:00 PM	0.0	0.0		
7:00 PM	0.0	0.0		
8:00 PM	0.0	0.0		
9:00 PM	0.0	0.0		
10:00 PM	0.0	0.0		
11:00 PM	0.0	0.0	Ldn	31.3

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/11/2024
Case Description: Facility Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Ranch House	Residential	50.0	50.0	40.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	7700.0	0.0
Welder / Torch	No	40		74.0	7700.0	0.0
Welder / Torch	No	40		74.0	7700.0	0.0
Forklift	No	40		79.1	7700.0	0.0
Forklift	No	40		79.1	7700.0	0.0
Backhoe	No	40		77.6	7700.0	0.0
Backhoe	No	40		77.6	7700.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	36.8	28.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Welder / Torch	30.2	26.3	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Welder / Torch	30.2	26.3	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Forklift	35.3	31.4	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Forklift	35.3	31.4	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Backhoe	33.8	29.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Backhoe	33.8	29.8	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A
Total	36.8	38.0	50.0	N/A	50.0	N/A	50.0	N/A	None	N/A	None	N/A	None	N/A

BIDR, LLC Exploratory Well - Facility Construction Phase

Time	Leq	Lmax		
12:00 AM	0.0	0.0		
1:00 AM	0.0	0.0		
2:00 AM	0.0	0.0		
3:00 AM	0.0	0.0		
4:00 AM	0.0	0.0		
5:00 AM	0.0	0.0		
6:00 AM	0.0	0.0		
7:00 AM	38.0	36.8		
8:00 AM	38.0	36.8		
9:00 AM	38.0	36.8		
10:00 AM	38.0	36.8		
11:00 AM	38.0	36.8		
12:00 PM	38.0	36.8		
1:00 PM	38.0	36.8		
2:00 PM	38.0	36.8		
3:00 PM	38.0	36.8		
4:00 PM	38.0	36.8		
5:00 PM	38.0	36.8		
6:00 PM	0.0	0.0		
7:00 PM	0.0	0.0		
8:00 PM	0.0	0.0		
9:00 PM	0.0	0.0		
10:00 PM	0.0	0.0		
11:00 PM	0.0	0.0	Ldn	34.6