Appendix I

Water Quality Management Plan

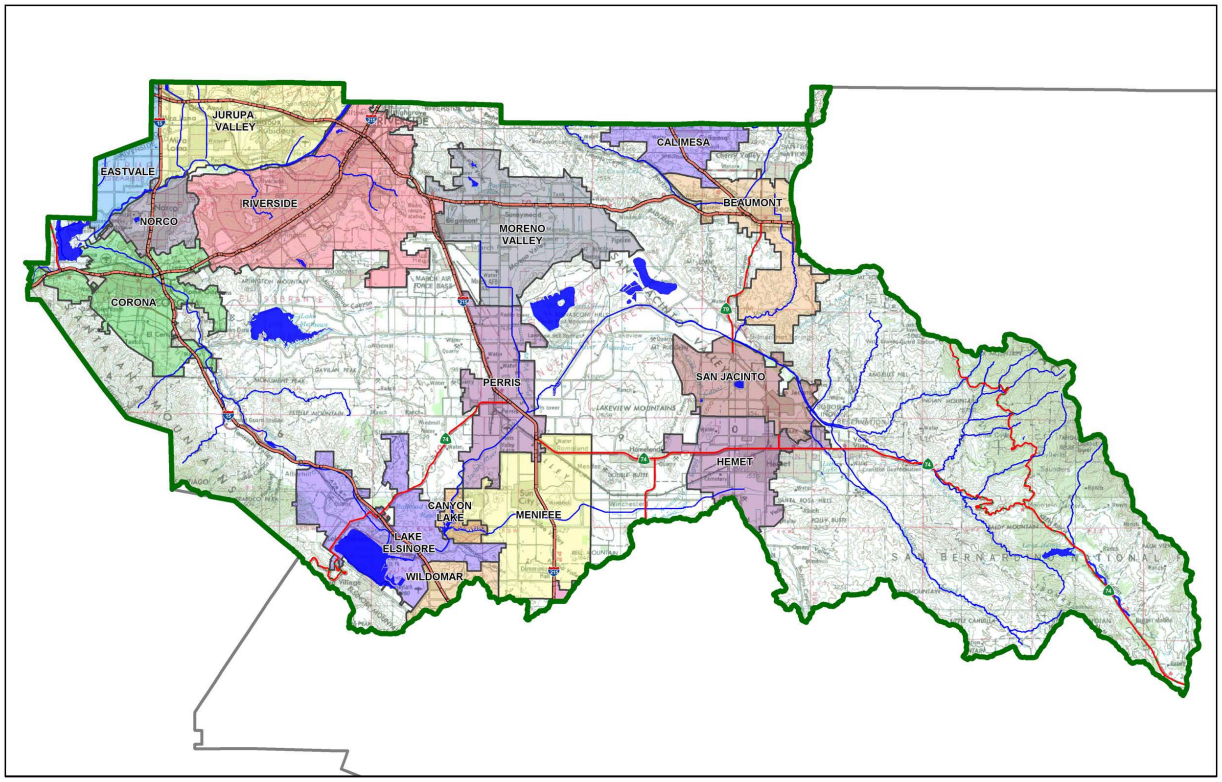
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Cordyon Gateway

Development No: Insert text here

Design Review/Case No: PWQMP-2020-00002



☒ **Preliminary**
☐ **Final**

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Prepared for Compliance with
Regional Board Order No. **R8-2010-0033**
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Contact Information:

Prepared for:
Mark Cooper
R.E.D Corydon, LLC
38122 Stone Meadow Drive
Murrieta, CA 92562

Prepared by:
KWC Engineers
1880 Compton Ave., Suite 100
Corona, CA 92881
Brandon Barnett, P.E.
(951) 734-2130 x203

ERSC
Engineering Resources of Southern California

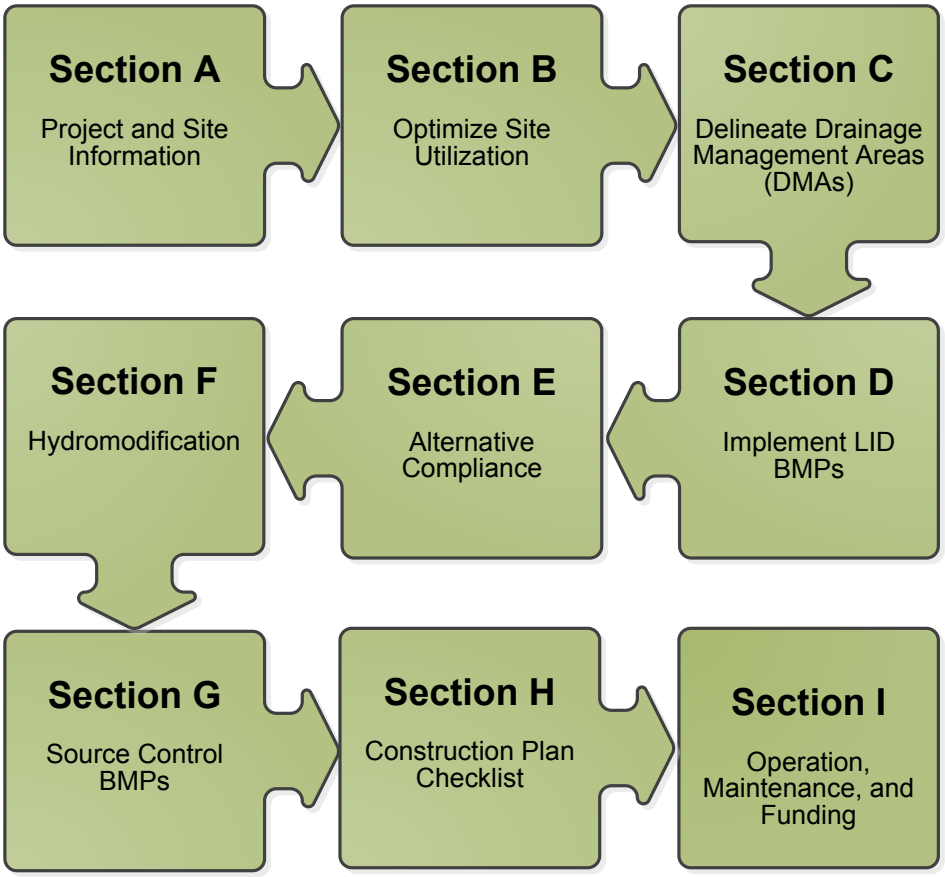
9/10/20
DATE

Stephen Nelson

APPROVED AS SUBMITTED

A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your "how-to" manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for R.E.D Corydon, LLC by KWC Engineers for the Corydon project.

This WQMP is intended to comply with the requirements of RIverside County for Storm Water Quality Ordinance which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under Riverside County Water Quality Ordinance (Municipal Code Section 14.12.315).

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature	9/1/2020 Date
Mark R. Cooper Owner's Printed Name	President Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature	9/2/2020 Date
Matthew Laninovich Preparer's Printed Name	Project Engineer Preparer's Title/Position

Preparer's Licensure:



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Section A: Project and Site Information

PROJECT INFORMATION		
Type of Project:	Commercial	
Planning Area:	East Lake specific Plan	
Community Name:	City of Lake Elsinore	
Development Name:	Corydon Gateway	
PROJECT LOCATION		
Latitude & Longitude (DMS): 33° 38'03''N, 117° 17'30''W		
Project Watershed and Sub-Watershed: Lake Elsinore		
Gross Acres: 6.05 APN(s): 370-050-026, and 370-050-030 Map Book and Page No.: N/A		
PROJECT CHARACTERISTICS		
Proposed or Potential Land Use(s)	Commercial	
Proposed or Potential SIC Code(s)	N/A	
Area of Impervious Project Footprint (SF)	230,868	
Total Area of proposed Impervious Surfaces within the Project Footprint (SF)/or Replacement	230,868	
Does the project consist of offsite road improvements?	☐ Y	☒ N
Does the project propose to construct unpaved roads?	☐ Y	☒ N
Is the project part of a larger common plan of development (phased project)?	☒ Y	☐ N
EXISTING SITE CHARACTERISTICS		
Total area of existing Impervious Surfaces within the Project limits Footprint (SF)	0	
Is the project located within any MSHCP Criteria Cell?	☒ Y	☐ N
If so, identify the Cell number:	5131	
Are there any natural hydrologic features on the project site?	☒ Y	☐ N
Is a Geotechnical Report attached?	☒ Y	☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	N/A	
What is the Water Quality Design Storm Depth for the project?	0.68	

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling
- BMP Locations (Lat/Long)

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
LAKE ELSINORE	DDT, NUTRIENTS, ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN, PCBS, AND TOXICITY	REC1, REC2, WARM, COMM, WILD, RARE	2.5 MILES

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage	☐ Y	☒ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☒ Y	☐ N
Other *(please list in the space below as required)* City of Lake Elsinore Grading, Improvements, and Building Permits.	☒ Y	☐ N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, **constraints** might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. **Opportunities** might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Consideration of "highest and best use" of the discharge should also be considered. For example, Lake Elsinore is evaporating faster than runoff from natural precipitation can recharge it. Requiring infiltration of 85% of runoff events for projects tributary to Lake Elsinore would only exacerbate current water quality problems associated with Pollutant concentration due to lake water evaporation. In cases where rainfall events have low potential to recharge Lake Elsinore (i.e. no hydraulic connection between groundwater to Lake Elsinore, or other factors), requiring infiltration of Urban Runoff from projects is counterproductive to the overall watershed goals. Project proponents, in these cases, would be allowed to discharge Urban Runoff, provided they used equally effective filtration-based BMPs.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

The existing drainage pattern of the site were identified and preserved. In the existing condition the site is draining generally from the East of the site into the West corner through natural ravines. Our proposed site will keep the same drainage pattern and create a low point Southwest corner of the site to collect all the water into a proposed Bio-retention Basin where the storm water runoff will be collected and treated before being diverted into the Riverside County Flood Control Channel that will eventually lead into Lake Elsinore.

Did you identify and protect existing vegetation? If so, how? If not, why?

Existing vegetation will be removed during the grading process; however, the project proposes to incorporate drought-tolerant landscaping within the site for all pervious surfaces.

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

The natural infiltration on the site is very poor, as shown on the percolation test performed by the soils engineer. In addition, the City of Lake Elsinore requires all new development project to direct stormwater runoff into the Lake and not attempt to infiltrate it on-site due to the Highest and Best use principle. Therefore, all flows onsite will be directed into a Bio-retention basin with underdrains.

Did you identify and minimize impervious area? If so, how? If not, why?

Yes, impervious areas were minimized based on design standards to meet zoning and improvement requirements.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

No, all runoff from impervious surfaces will drain to a Bio-retention basin along the western project boundary. Flows will exit into a Riverside County Flood Control Channel and ultimately into Lake Elsinore.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[1][2]	Area (Sq. Ft.)	DMA Type
DMA 1A	Roofs	38,165	Type D
DMA 1B	Concrete/Asphalt	171,583	Type D
DMA 1C	Landscaping	54,060	Type D

[1]*Reference Table 2-1 in the WQMP Guidance Document to populate this column*
[2]*If multi-surface provide back-up*

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
N/A			

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet)	Post-project surface type	Impervious fraction	Product		Area (square feet)	Ratio
	[A]		[B]	[C] = [A] x [B]	DMA name /ID	[D]	[C]/[D]

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA 1A, 1B, and 1C	Bio-retention Basin

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☒ Y ☐ N

If yes has been checked, Infiltration BMPs shall not be used for the site; proceed to section D.3

If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?		X
If Yes, list affected DMAs:		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs:		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?	X	
Describe here: Silty/Clayey soil found onsite that provides low infiltration rates that makes infiltration on site infeasible		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

D.2 Harvest and Use Assessment

Please check what applies*:*

☐ Reclaimed water will be used for the non-potable water demands for the project.

☒Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☐The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If none of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape:

Type of Landscaping (Conservation Design or Active Turf):

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces:

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor:

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area:

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users:

Project Type:

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces:

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-2 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor:

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users:

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	**Projected number of toilet users (Step 1)**

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand:

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces:

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-4 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-4:

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use:

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the projected average daily use (Step 1) to the minimum required non-potable use (Step 4).

Minimum required non-potable use (Step 4)	**Projected average daily use (Step 1)**

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment per Section 3.4.2 of the WQMP Guidance Document.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☒ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
DMA 1A	☐	☐	☒	☐	☐
DMA 1B	☐	☐	☒	☐	☐
DMA 1C	☐	☐	☒	☐	☐

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First**,** calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second**,** design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Bio-retention Basin*		
	[A]		[B]	[C]	[A] x [C]			
1A	*38,165*	*Roofs*	*1.0*	*0.89*	*34,043*	*Design Storm Depth (in)*	*Design Capture Volume,* $\mathbf{V_{BMP}}$ *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
1B	*171,583*	*Concrete or Asphalt*	*1.0*	*0.89*	*153,052*			
1C	*54,060*	*Landscaping*	*0.1*	*0.11*	*5,971*			
	A_T = 263,808				Σ= 193,066.6	0.68	[F] = 10,940	***11,631***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

☒ LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

E.1 Identify Pollutants of Concern

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☒ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☒ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☒ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☒ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☐	☐	☒	☒	☒	☐	☐	☐

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
N/A	
Total Credit Percentage[1]	

[1]Cannot Exceed 50%

[2]Obtain corresponding data from Table 3-8 in the WQMP Guidance Document

E.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Area x Runoff Factor**		***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]				
N/A						*Design Storm Depth (in)*	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document

[E] is for Flow-Based Treatment Control BMPs [E] = .2, for Volume-Based Control Treatment BMPs, [E] obtained from Exhibit A in the WQMP Guidance Document

[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12

[H] is from the Total Credit Percentage as Calculated from Table E.2 above

[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.
[2] Cross Reference Table E.1 above to populate this column.
[3] As documented in a Co-Permittee Approved Study and provided in Appendix 6.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration			
Volume (Cubic Feet)			

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Susceptibility Maps.

Does the project qualify for this HCOC Exemption? ☒ Y ☐ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

LAKE ELSINORE

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.

b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.

c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources*:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.

2. ***Note Locations on Project-Specific WQMP Exhibit*:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.

3. ***Prepare a Table and Narrative*:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.

4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
On-site Storm Drain Inlets	• Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers shall be per local agency requirements	• Maintain and annually repaint or replace inlet markings. • Inspect for debris accumulation and evidence of illegal dumping monthly and clean to maintain functionality. • See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

		• Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."
Need for future indoor & structural pest control	• Note building design features that discourage entry of pests.	• Provide Integrated Pest Management information to owners, lessees, and operators.
Landscape/ Outdoor Pesticide Use	Final landscape plans will accomplish all of the following: • Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. • The biotreatment basin will be irrigated and planted with drought-tolerant plants that are also tolerant of saturated soil conditions during brief periods. • Use of pest-resistant plants, especially adjacent to hardscape. • To ensure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	• Maintain landscaping using minimum or no pesticides. • See applicable operational BMPs in "What you should know for…..landscape and Gardening" at http://rcflood.org/stormwater/ • Provide IPM information to new owners, lessees and operators. • Maintain landscaping and irrigation system per CASQA BMPs SC-41, SD-10, and SD-12 fact sheets in Appendix 10.
Food Service	• Clean equipment in a designated indoor area, such as mop, sink, pot sink, or floor area with a drain connected to the sanitary sewer (indoor plumbing) • Clean equipment in a designated covered, bermed outdoor area with a drain connected to the sanitary sewer (indoor plumbing). Don't allow food waste	• See the brochure, "The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http://rcflood.org/stormwater/ Provide this brochure to new site owners, lessees, and operators.

	to accumulate in this area • Do not clean equipment outdoors in any area where water may flow to a street, gutter, storm drain or creek.	
Fuel Dispensing Areas	• Install Quick-shutoff nozzles • Use floor as a containment system for fuel dispensing area	• The property owner shall dry sweep the fueling area routinely. • See the Fact Sheet SD-30, "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphadbooks.com and attached in App. 10
Fire Sprinkler Test Water	• Owner shall provide a means to drain fire sprinkler test water to the sanitary sewer	• See the note in Fact Sheet SC-41. "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com and attached in App. 10.
Plazas, sidewalks, and parking lots		• Owner shall vacuum, sweep plazas, sidewalks, and parking lots monthly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect wash water containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.
Trash Enclosure(s)	• All trash enclosures on the site shall be covered with a solid canopy style roof and shall have surrounding drainage directed away from them	• Owner shall maintain and sweep out trash enclosures monthly and shall require tenants to keep dumpster lid closed at all times and shall contract with the City to regularly empty dumpsters.
Vehicle Cleaning (Carwash)	• All carwash wastewater shall be plumbed to sanitary sewer drains for disposal	• Owner shall maintain wash bay and drains to prevent discharges to storm drains.

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	BMP Location (Lat/Long)
DMA 1A, 1B, and 1C	Bio-retention Basin		

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism:

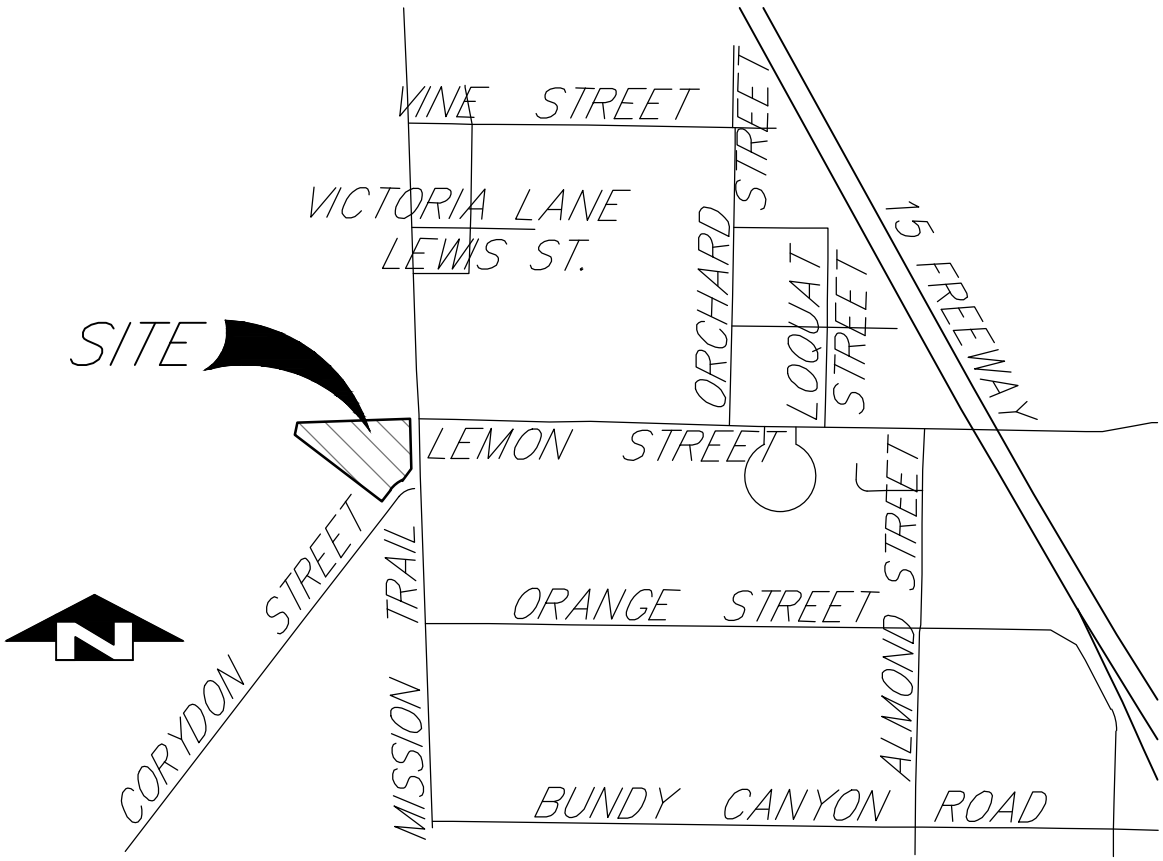
Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☐ Y ☒ N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map



VICINITY MAP

VICINITY MAP

NOT TO SCALE

FIGURE 1

PREPARED BY:

KWC ENGINEERS

CIVIL ENGINEERS • PLANNERS • SURVEYORS
1880 COMPTON AVENUE, SUITE 100 • CORONA, CA. 92881-3370 • 951-734-2130

CORYDON GATEWAY

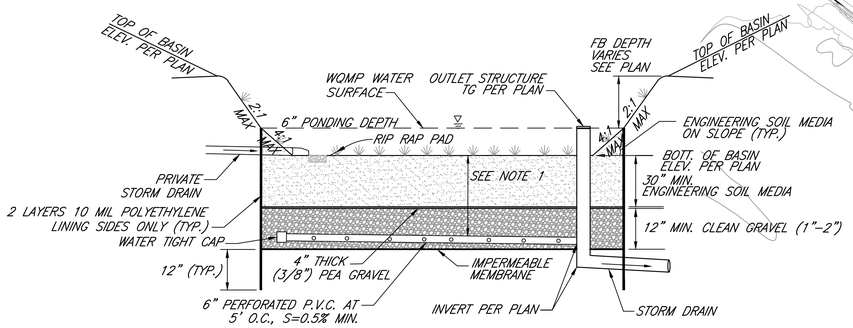
VICINITY MAP

DATE	DRAWN BY	CHECKED BY	J.N.
2-11-20	HC	ML	19.1990

R:\19\1990\PRELIM\REPORTS\HYDRO\Appendix A\1990 Vicinity Map.dwg

SOURCE CONTROL BMP:

1. CATCH BASIN INLET MESSAGES
2. SOLID ROOF COVERED TRASH ENCLOSURES
3. VACUUM-ASSISTED PAVEMENT SWEEPING
4. LANDSCAPING/IRRIGATION SYSTEM MAINTENANCE
5. FOOD SERVICE WASTE STORAGE/CLEANUP AREA
6. FUEL DISPENSING AREA, CASQA BMP# SD-30
7. CAR WASH FACILITY, CASQA BMP# SC-33
8. BIO CLEAN CATCH BASIN INLET FILTER
9. BIO CLEAN ARS SYSTEM INLET ON CURB CUT



NOTE:

1. INVERT OF PERFORATED PIPE SHALL NOT BE GREATER THAN 48" FROM BASIN BOTTOM. MINIMUM 2" GRAVEL SECTION ABOVE TOP OF PIPE AND BELOW BOTTOM OF PIPE.
2. CLEANOUT ON UNDERDRAIN NOT SHOWN FOR CLARITY.
3. COUNTY RECOMMENDED PLANT LIST FOR THE BASIN IS INCLUDED IN THE WQMP REPORT.

BIO-RETENTION BASIN

NOT TO SCALE

ENGINEERED SOIL MEDIA REQUIREMENTS:
THE ENGINEERED SOIL MEDIA SHALL BE COMPRISED OF 85% MINERAL COMPONENT AND 15% ORGANIC COMPONENT, BY VOLUME, DRUM MIXED PRIOR TO PLACEMENT. THE MINERAL COMPONENT SHALL BE A CLASS A SANDY LOAM TOP SOIL THAT MEETS THE RANGE SPECIFIED IN TABLE BELOW. THE ORGANIC COMPONENT SHALL BE NITROGEN STABILIZED COMPOST.

MINERAL COMPONENT RANGE REQUIREMENT

PERCENT RANGE	COMPONENT
70-80	SAND
15-20	SILT
5-10	CLAY



LEGEND

- ROOF AREA
- STREET AREA
- CONCRETE AREA
- LANDSCAPING AREA
- WQMP BASIN
- DMA A / 0.41 — DMA NUMBER / TRIBUTARY AREA (ACRES)
- TRIBUTARY AREA BOUNDARY
- PROPOSED STORM DRAIN
- CB — PROPOSED CATCH BASIN
- AD/GI — AREA DRAIN/GRATE INLET
- DRAINAGE FLOW DIRECTION
- —R— RIDGE LINE

NOTE: ROOF LINES AND DOWNSPOUTS ARE NOT SHOWN FOR SAKE OF CLARITY ON THE SITE PLAN.

WQMP TREATMENT SUMMARY TABLE

UNIT	DMA AREA (AC)	IMPERVIOUS (AC)	PERVIOUS (AC)	DESIGN CAPTURE VOLUME (CU-FT)	PROPOSED CAPTURE VOLUME (CU-FT)
A	6.05	4.81	1.24	10,940	11,631
TOTAL	6.05	4.81	1.24	10,940	11,631

40' 0 40' 80' 120'
SCALE IN FEET

DATED: 02-20-20

PRELIMINARY WQMP EXHIBIT
CORYDON GATEWAY
CITY OF LAKE ELSINORE

PREPARED FOR:
R.E.D CORYDON, LLC
38122 STONE MEADOW DRIVE
MURRIETA, CA 92562

PREPARED BY:
KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
1880 COMPTON AVENUE, SUITE 100 CORONA, CA. 92881-3370 951-734-2130

SHEET 1 OF 1 SHEETS

18.1847.01 R:\19\1990\PRELIM REPORTS\PRELIM WQMP\Appendix 1-Map and Site Plans\1990 Prelim WQMP Site Plan.dwg 08/24/2020 15:37

Bio Clean

A Forterra Company

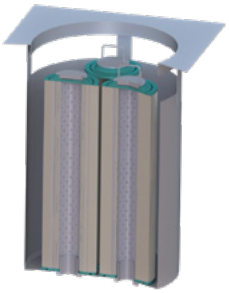
Catch Basin Inlet Filters

A Stormwater Trash Capture Solution



OVERVIEW

The Bio Clean Catch Basin Inlet Filters are insertable systems designed to capture fine to coarse sediments, floatable trash, debris, total suspended solids (TSS), nutrients, metals, and hydrocarbons conveyed in stormwater runoff. The filter system is available in four different model types:

Full Capture Type	Multi-Level Screen Type	Kraken Filter Type	Media Filter Type
			
California Water Board Certified	**Verified by the New Jersey Corporation for Advanced Technology**	**Advanced Pollutant Removal**	**Design for Industrial Applications**
TESTING HIGHLIGHT: **California Water Board** **100% of Trash**	**TESTING HIGHLIGHT:** **NJDEP Testing Protocol** **86.6% of TSS** **(Down to 100 Micron)**	**TESTING HIGHLIGHT:** **Third Party Testing** **85% of TSS & 72% of TP**	**TESTING HIGHLIGHT:** **Port of San Diego Field Testing** **82% of TSS**

The Catch Basin Inlet Filters are an effective and economical solution to help property owners, developers, and municipalities meet local, state, and federal water quality requirements and regulations, as each filter can be custom built to meet specific project needs, and screen size and media type can be modified to remove specific pollutants.

Constructed of 100% high-grade stainless steel, it is built to last longer than any other filter brand, and the non-clogging screens provide higher levels of filtration and water flow. The filter is equipped with unimpeded high flow bypass to prevent backflow during the largest storm events.

ADVANTAGES

- 8-YEAR WARRANTY
- WORKS IN ANY SIZE CATCH BASIN
- NO NETS OR GEOFABRICS
- 15+ YEARS USER LIFE
- EASIEST TO MAINTAIN TROUGH SYSTEM ALLOWS FOR 15-MINUTE OR LESS SERVICE TIME
- MEETS LEED REQUIREMENTS
- STAINLESS STEEL AND FIBERGLASS CONSTRUCTION

APPLICATIONS

The Catch Basin Inlet Filters have been successfully used on numerous new construction and retrofit projects. The system's superior durability and customization make it ideal for a wide range of stormwater applications. Each filter fits within a shallow catch basin, giving them the ability to integrate with versatile curb inlet trough systems.

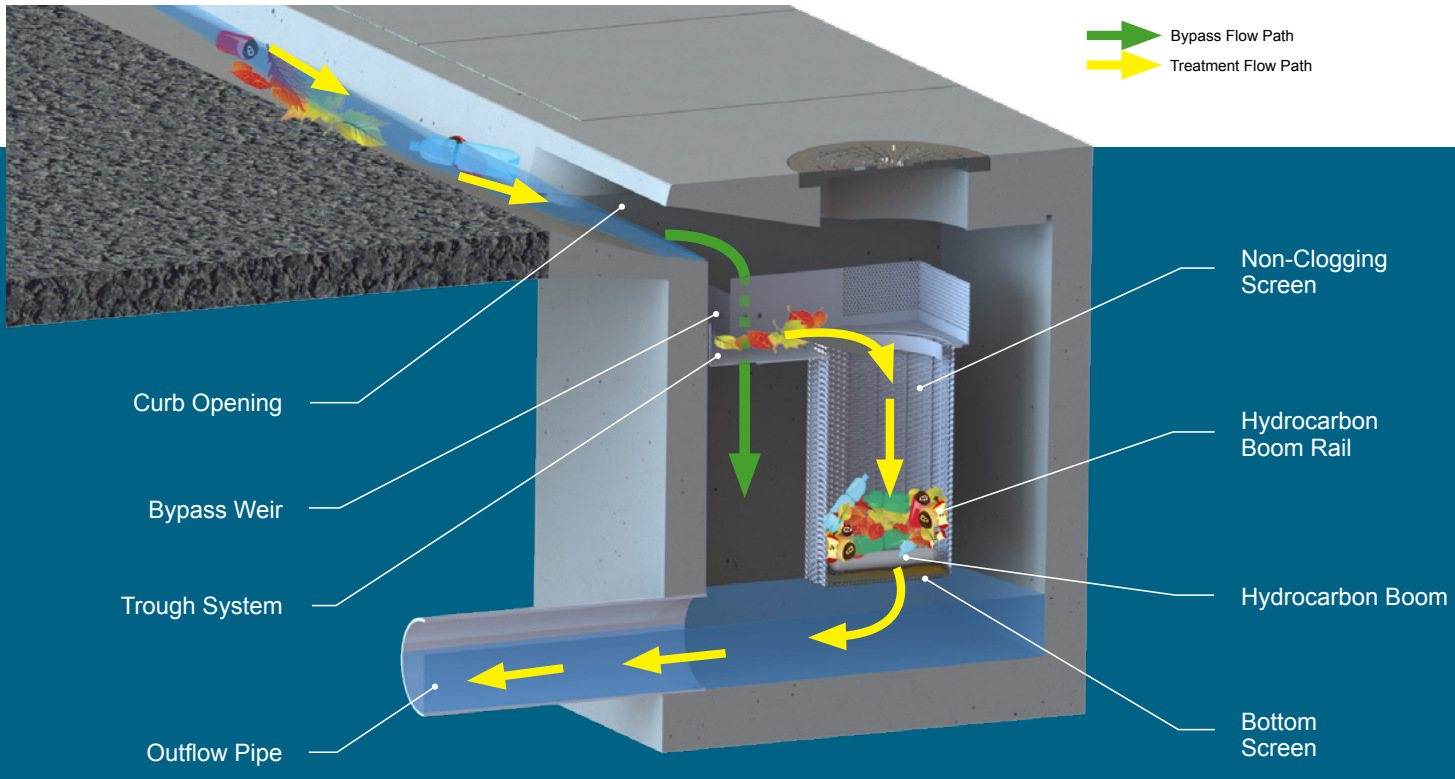
- Parking Lot Curb Inlets
- Parking Lot Grate Inlets
- Roadway Curb Inlets
- Roadway Grate Inlets
- Bioswale Bypass Structures
- Stormwater Pretreatment

CURB INLET APPLICATION

The curb inlet application or shelf system, provides easy access for maintenance from the surface without having to enter the catch basin. Maintenance service takes about 15 minutes and requires no confined space entry.

Each Catch Basin Inlet Filter is designed to be insertable and the expandable trough system is designed to convey water quality design flows through the filter basket while allowing peak flows to bypass over the trough without resuspending captured pollutants. The modular design of the trough system makes it adaptable to any size or type of curb inlet catch basin.

OPERATION



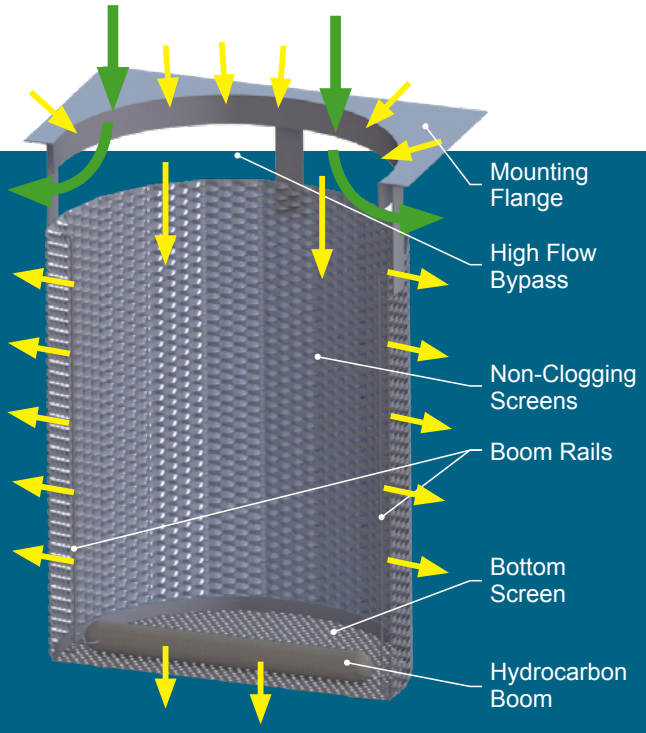
FULL CAPTURE TYPE

The Full Capture type inlet filter is California Full Capture approved and allows for a higher flow of water, making it more applicable for demanding applications. The screen has a specialized design that efficiently caputres all trash, but also makes cleaning more efficient while maintaining its ability to meet demanding flow requirements.

PERFORMANCE

100% REMOVAL OF TRASH

OPERATION



SPECIFICATIONS

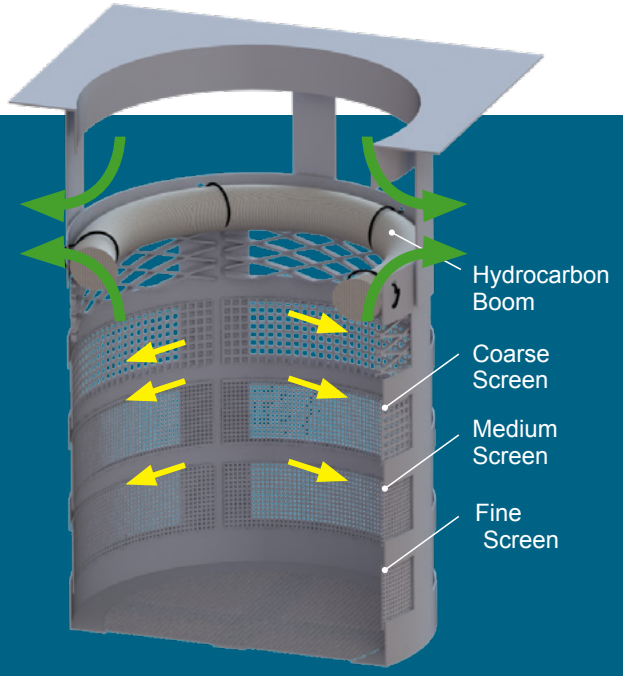
MODEL #	TREATMENT FLOW (cfs)	BYPASS FLOW (cfs)
BIO-CURB-FULL	2.85	UNLIMITED
BIO-GRATE-FULL-12-12-12	1.55	1.55
BIO-GRATE-FULL-18-18-18	4.32	3.68
BIO-GRATE-FULL-24-24-24	7.67	4.83
BIO-GRATE-FULL-30-30-24	12.97	6.21
BIO-GRATE-FULL-25-38-24	13.53	6.59
BIO-GRATE-FULL-36-36-24	19.64	7.60
BIO-GRATE-FULL-48-48-18	25.59	10.13

Note: Curb inlet application teatment flow rate limited to the weir capacity - actual flow rates of the filter basket is greater than 2.85 cfs.
Various depth filter baskets available. Treatment and bypass flow rates include a safety factor of 2.

MULTI-LEVEL SCREEN TYPE

The Bio Clean Multi-Level Screening Grate Inlet Filter is the standard configuration used for more than a decade and provides the best overall performance for all pollutants of concern.

OPERATION



PERFORMANCE

80% REMOVAL OF SEDIMENTS

100% REMOVAL OF TRASH

100% REMOVAL OF FOLIAGE

- MEDIUM LEVEL REMOVAL FOR PARTICULATE METALS AND NUTRIENTS
- INCLUDES HYDROCARBON BOOM FOR REMOVAL OF OILS AND GREASE

SPECIFICATIONS

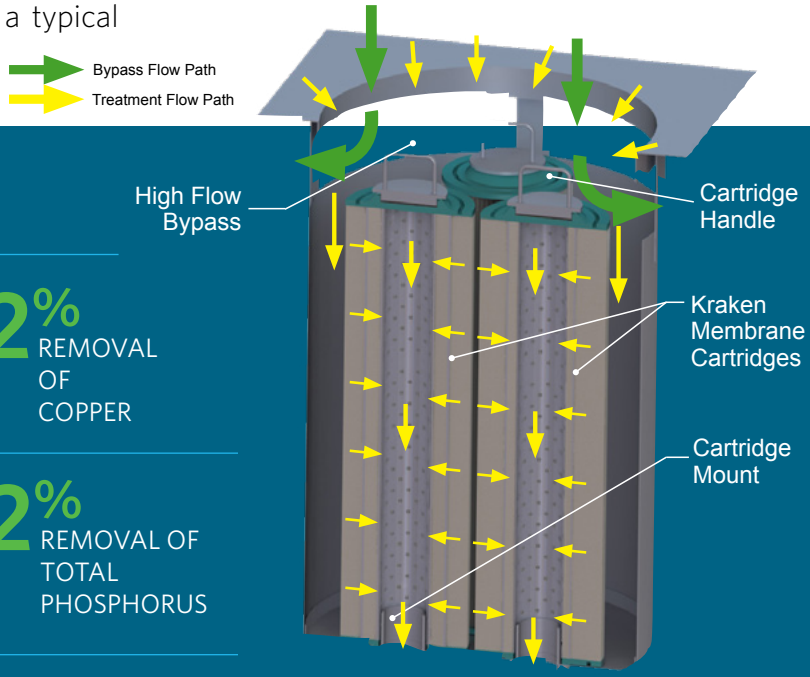
MODEL #	SCREEN TREATMENT FLOW (cfs)	BYPASS FLOW (cfs)
BIO-CURB-MLS	2.85	UNLIMITED
BIO-GRATE-MLS-12-12-12	0.52	0.52
BIO-GRATE-MLS-18-18-18	2.51	2.51
BIO-GRATE-MLS-24-24-24	5.31	5.31
BIO-GRATE-MLS-30-30-24	10.05	10.05
BIO-GRATE-MLS-25-38-24	10.39	10.39
BIO-GRATE-MLS-36-36-24	16.28	12.53
BIO-GRATE-MLS-48-48-18	16.94	17.05

Note: Curb inlet application teatment flow rate limited to the weir capacity - actual flow rates of the filter basket is greater than 2.85 cfs.
Various depth filter baskets available. Treatment and bypass flow rates include a safety factor of 2.

KRAKEN FILTER TYPE

The Bio Clean Grate Inlet Kraken Filter is an advanced-level filtration device designed with Kraken membrane cartridges for increased removal efficiencies. Kraken Filter cartridges are removable and reusable after spray cleaning with a typical garden hose.

OPERATION



PERFORMANCE

85% REMOVAL OF FINE TSS	**81%** REMOVAL OF OILS & GREASE	**52%** REMOVAL OF COPPER
58% REMOVAL OF ZINC	**60%** REMOVAL OF FECAL COLIFORM	**72%** REMOVAL OF TOTAL PHOSPHORUS

SPECIFICATIONS

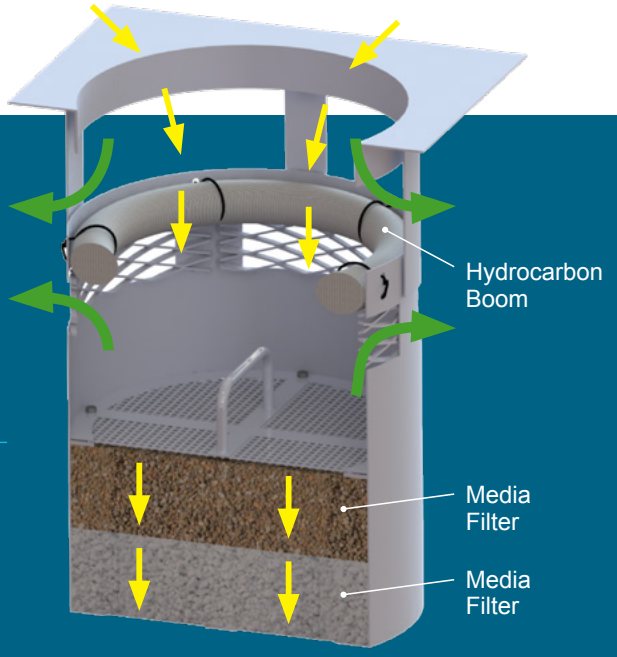
MODEL #	MEDIA TREATMENT FLOW (cfs)	BYPASS FLOW (cfs)
BIO-CURB-KMF-33	0.13	UNLIMITED
BIO-GRATE-KMF-12-12-39	0.04	0.52
BIO-GRATE-KMF-18-18-39	0.04	2.51
BIO-GRATE-KMF-24-24-39	0.17	5.31
BIO-GRATE-KMF-36-36-39	0.50	12.53
BIO-GRATE-KMF-48-48-39	0.88	17.05

Note: Media treatment flow rate based on three 30" tall Kraken filter cartridges. Various filter basket and Kraken Filter Cartridge heights available.

MEDIA FILTER TYPE

The Bio Clean Grate Inlet Media Filter is made of 100% stainless steel and is available in various sizes and depths allowing it to fit in any grated catch basin inlet. The filter's heavy duty construction allows for cleaning with any vacuum truck.

OPERATION



PERFORMANCE

85% REMOVAL OF FINE TSS	**95%** REMOVAL OF OILS & GREASE	**95%** REMOVAL OF COPPER
94% REMOVAL OF ZINC	**83%** REMOVAL OF LEAD	

SPECIFICATIONS

MODEL #	MEDIA TREATMENT FLOW (cfs)	BYPASS FLOW (cfs)
BIO-CURB-MF-24	0.11	UNLIMITED
BIO-GRATE-MF-12-12-12	0.08	0.52
BIO-GRATE-MF-18-18-18	0.18	2.51
BIO-GRATE-MF-24-24-24	0.35	5.31
BIO-GRATE-MF-36-36-24	0.86	12.53
BIO-GRATE-MF-48-48-18	1.36	17.05

Note: Media treatment flow rate based on hydraulic conductivity of bulk media pack verified in labratory evalution. Various filter basket heights available.

INSTALLATION

CURB INLET FILTER



Bio Clean's Curb Inlet Filters are easily installed under catch basin access for ease of maintenance.

GRATE INLET FILTER



Grate Inlet Filters can be quickly installed directly under grated inlets with no special equipment.

MAINTENANCE

CURB INLET FILTER





Filters can be lifted out by hand for routine maintenance and inspections.

GRATE INLET FILTER



Bio Clean
A Forterra Company

5796 Armada Drive Suite 250
Carlsbad, CA 92008
855.566.3938
stormwater@forterrabp.com
biocleanenvironmental.com

Bio Clean

A Forterra Company

Bio Clean ARS™

A Stormwater Trash Capture Solution



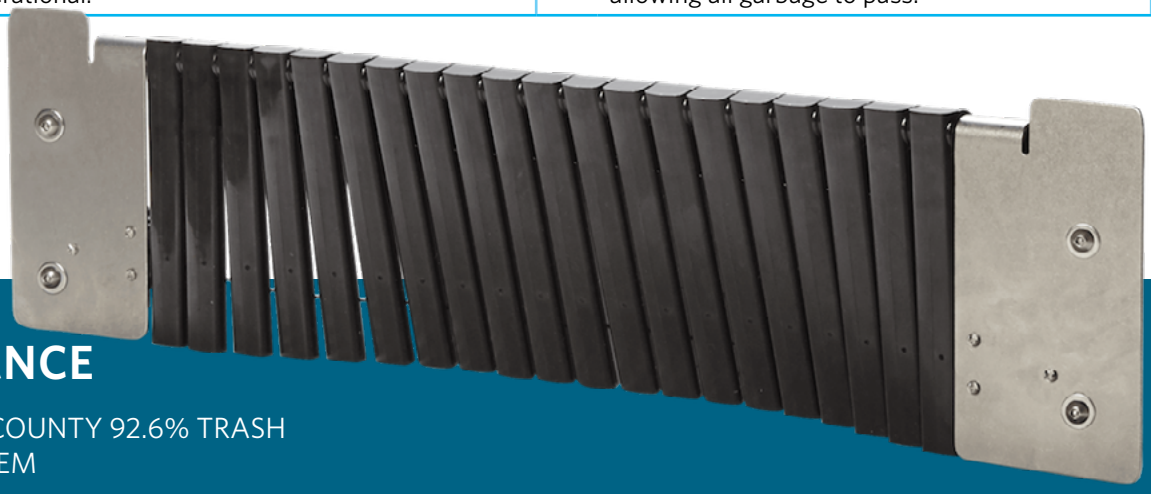
OVERVIEW

The Bio Clean ARS™ (Automatic Retractable Screen) is the industry's most unique and dependable automatic retractable screen system, designed to block trash and debris from entering storm drains during dry weather flows and light to moderate rain.

Each blade moves independently to a controlled level, blocking trash, but allowing water to move freely underneath. The Bio Clean ARS blades can also be adjusted for more restrictive flow or a looser tolerance for increased water capacity, and individually changed for easy maintenance.

Every versatile Bio Clean ARS feature allows the system to adapt to the demands of different locations as well as various types of curb structures, making it one of the most cost-effective and reliable solutions available in the industry.

Bio Clean ARS Advantages	Common Disadvantages of Other Gates
✓ Blades work independently, so they will not jam.	✗ Many gates unlock when water level reaches a certain height.
✓ As water flow increases each blade reacts separately.	✗ Locking gates can get stuck and will not open at all.
✓ If debris gets stuck under a few blades, the overall system remains operational.	✗ Locking gates get stuck in the open position allowing all garbage to pass.



PERFORMANCE

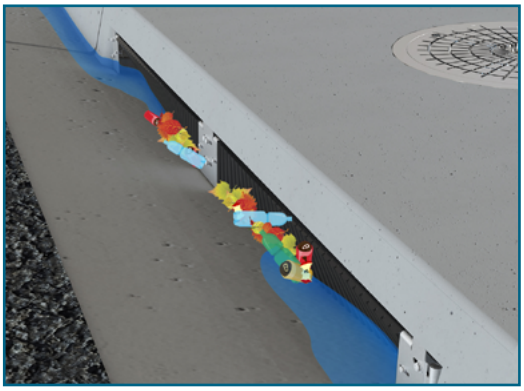
- LOS ANGELES COUNTY 92.6% TRASH CAPTURE SYSTEM
- WATER FLOWS MOVE THE INDIVIDUAL BLADES, FOR A MORE RESPONSIVE RESULT TO SITE AND FLOW CAPACITY
- POSITIVE FORCE RETURNS THE BIO CLEAN ARS TO THE CLOSED POSITION TO REDUCE THE POSSIBILITY OF DEBRIS BECOMING TRAPPED UNDER THE SCREEN
- BLADE SYSTEM CATCHES MATERIAL MORE EFFICIENTLY AND ALLOWS FOR EASIER CATCH BASIN CUSTOMIZATION
- INSTALLED WORLDWIDE AND OPERATIONAL IN 25 STATES
- THIS DESIGN WILL NOT GET STUCK IN THE OPEN POSITION, ALLOWING TRASH TO ENTER

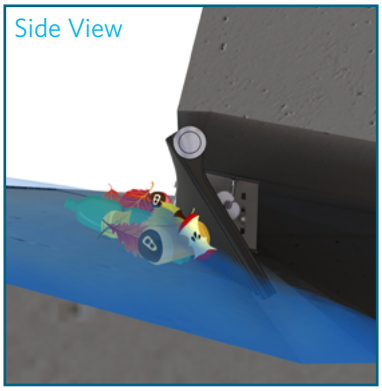
ADVANTAGES

- MINIMAL PARTS MAKES THIS A MORE COST-EFFECTIVE AND EASILY MAINTAINED DESIGN
- QUICK, EASILY ADJUSTABLE INSTALLATION ON ALL SIZE CATCH BASIN
- PLASTIC BLADES ARE DURABLE YET HARMLESS TO STREET SWEEPING EQUIPMENT
- ROUTINE STREET SWEEPING IS THE ONLY MAINTENANCE REQUIRED
- EASILY CUSTOMIZE-ABLE FOR CURB INLET HEIGHTS RANGING FROM 2" TO 10"

OPERATION

Design & Flow

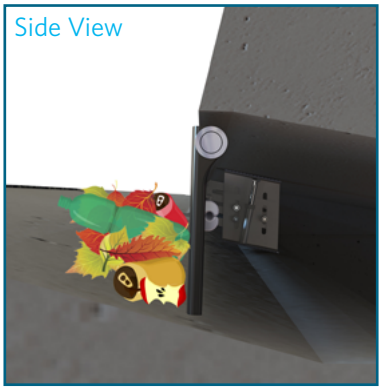




- Effectively stops trash and debris
- Blades only open where water flows and trash is pushed toward closed section
- Gate blades open with the water flow and readjust to close right after
- Water flows easily through the moving blades
- Tension cables are adjusted to the water flow pressure

After a Storm Event

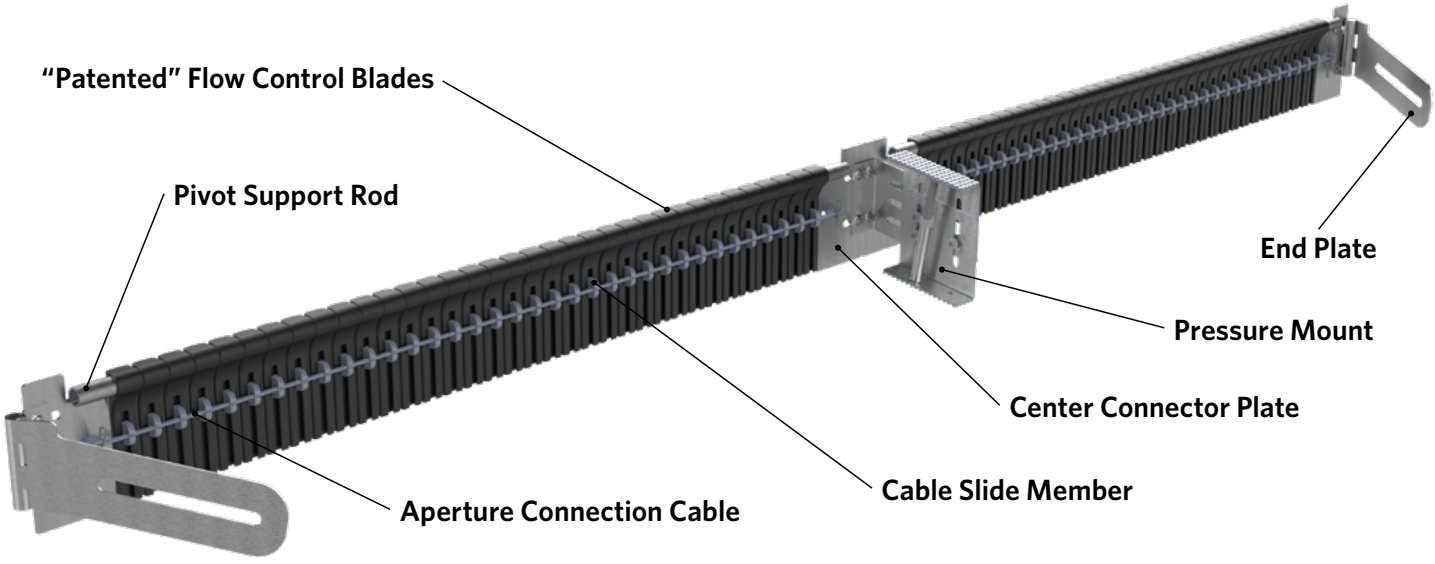




- Tension line keeps blades closed during dry weather and street sweeping
- Debris left in front of the gates after the storm
- The gate is not stuck open after the storm

SPECIFICATIONS

- MADE FROM RECYCLED, DURABLE POLYMER (NO SCRAP VALUE, ELIMINATING THEFT)



APPLICATIONS

Cast Iron Inlets



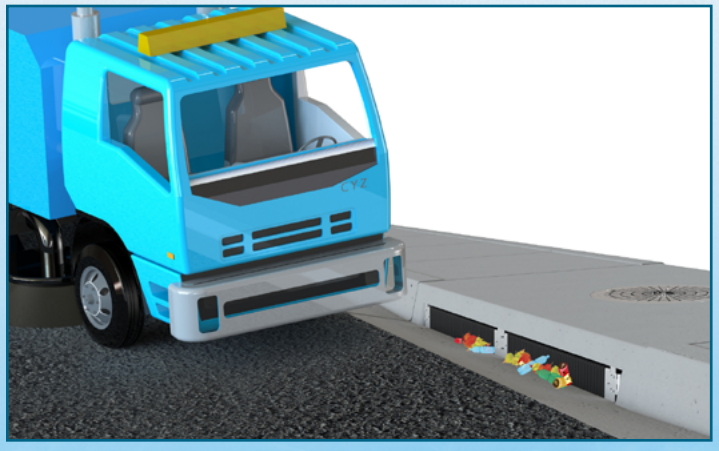
Standard Curb Inlets



Combination Inlets



MAINTENANCE



The Bio Clean ARS is durable enough to handle routine street sweeping, and it is the only maintenance necessary.



The Bio Clean Blades will not damage or harm any street sweeping equipment.

Bio Clean
A Forterra Company

5796 Armada Drive Suite 250
Carlsbad, CA 92008
855.566.3938
stormwater@forterrabp.com
biocleanenvironmental.com

Appendix 2: Construction Plans

Grading and Drainage Plans

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

Earth Strata Geotechnical Services, Inc.
Geotechnical, Environmental and Materials Testing Consultants

September 30, 2019 Project No. 192846-12A

Mr. Mark Cooper
R.E.D. CORYDON, LLC
38122 Stone Meadow Drive
Murrieta, CA 92562

Subject: **Infiltration Testing for Water Quality Treatment Areas, Assessor's Parcel Number 370-050-026, Located on the Northwest Corner of Corydon Road and Mission Trail Road, City of Lake Elsinore, Riverside County, California**

INTRODUCTION

Earth Strata Geotechnical Services is pleased to present this infiltration feasibility report for the proposed commercial plaza, located on located on the northwest corner of Corydon Road and Mission Trail Road, Assessor Parcel Number 370-050-026, in the City of Lake Elsinore, Riverside County, California. The purpose of our study was to determine the infiltration rates and physical characteristics of the subsurface earth materials at the approximate depth of the proposed WQMP area within the proposed development. This feasibility report provides the infiltration rates to be used for the design and the development of the water quality management plan, where applicable.

PROPERTY DESCRIPTION

The subject property is located on the northwestern corner of Corydon Road and Mission Trail Road in the City of Lake Elsinore, Riverside County, California. The approximate location of the site is shown on the Vicinity Map, Figure 1.

The subject property is comprised of approximately 4.26 acres of undeveloped land. The site has not been graded. Topographic relief at the subject property is relatively low with the terrain being generally flat. Elevations at the site range from approximately 1,264 to 1,280 feet above mean sea level (msl), for a difference of about 16± feet across the entire site. Drainage within the subject property generally flows to the northwest.

The site is currently bordered by commercial development to the east, south and west, as well as vacant property to the north. Most of the vegetation on the site consists of moderate amounts of annual weeds/grasses.

PROPOSED CONSTRUCTION

Based on the site plan provided by the client, the proposed development as illustrated on the conceptual grading plans will consist of a commercial development complete with interior streets, utilities, driveways, parking, and two (2) onsite water quality treatment areas.

SUBSURFACE EXPLORATION

Subsurface Exploration

Subsurface exploration within the subject site was performed on August 30, 2019 for the exploratory excavations. A truck mounted hollow-stem-auger drill rig was utilized to drill eight (8) borings throughout the site to a maximum depth of 46½ feet. The exploratory holes were excavated for geotechnical evaluation purposes with respect to the proposed developments and to interpret whether groundwater or impermeable soil layers were present. An underground utilities clearance was obtained from Underground Service Alert of Southern California, prior to the subsurface exploration. The approximate locations of the exploratory excavations are shown on the attached Infiltration Location Map, Plate 1 and descriptive logs are presented in Appendix A.

Earth materials encountered during exploration were classified and logged in general accordance with the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) of ASTM D 2488. Upon completion of laboratory testing, exploratory logs and sample descriptions may have been reconciled to reflect laboratory test results with regard to ASTM D 2487.

Earth Materials

A general description of the earth materials observed on site is provided below.

- Artificial Fill, Undocumented (map symbol Afu): Undocumented artificial fill materials were encountered throughout the site within the upper 2 feet during exploration. These materials are typically locally derived from the native materials and consist generally of yellowish brown to dark yellowish brown silty sand and clayey sand. These materials are generally inconsistent, poorly consolidated fills.

- Quaternary Young Alluvial Valley Deposits (map symbol Qyv): Quaternary alluvial deposits were encountered to a maximum depth of 46½ feet. These alluvial deposits consist predominately of interlayered yellowish brown to dark yellowish brown, fine to coarse grained silty sand as well as olive brown to light olive gray sandy clay and sandy silt. These deposits were generally noted to be in a slightly moist to moist, medium dense to dense state.

INFILTRATION TESTING

The double ring infiltrometer test method was utilized to perform a total of two (2) infiltration tests on September 20, 2019 to evaluate near surface infiltration rates in order to estimate the amount of storm water runoff that can infiltrate into the onsite water quality treatment areas. The infiltration tests were performed in general accordance with the requirements of double ring infiltration testing, ASTM D3385 and Appendix A of the Riverside County Flood Control and Water Conservation District.

The infiltration tests were performed using double ring infiltrometer and Mariotte tubes at a depth of 5 feet below existing grades. The locations of the infiltration tests are indicated on the attached Infiltration Location Map, Plate 1. The double ring infiltrometer tests were located by property boundary measurement on the site plan and by using geographic features. Infiltration test data recorded in the field are summarized in the following table and is included within Appendix C including the graph of Infiltration Rate versus Elapsed Time.

Infiltration Test Summary

TEST NUMBER	INFILTRATION HOLE DEPTH (ft.)	INFILTRATION RATE (in/hr)	DESCRIPTION
DR-1	5	0.25	Silty SAND
DR-2	5	0.25	Silty SAND

The infiltration test rates were 0.25 inches per hour (in/hr).

CONCLUSIONS AND RECOMMENDATIONS

General

From geotechnical and engineering geologic points of view, the proposed WQMP areas, where tested, is considered suitable for infiltration for the proposed development, provided the following conclusions and recommendations are incorporated into the plans and are implemented during construction.

Groundwater

Groundwater was not observed during our subsurface exploration to a total depth of 46½ feet. Potential groundwater impact is considered very low. According to the California Department of Water Resources, local well data indicates no shallow groundwater is present in the area, as illustrated in the Historic Well Data in Appendix B, meeting the minimum separation of 10 feet from the bottom of infiltration facility to the groundwater mark.

Geologic/ Geotechnical Screening

The proposed WQMP areas (see Plate 1) are located at a lower elevation than the proposed structures in competent native earth materials.

The proposed structures will be supported by compacted fill and competent earth materials, with no shallow groundwater (see Appendix B). According to the County of Riverside reports, the subject site is located in an area where liquefaction potential is considered moderate. However, due to the recommended compacted fill, absence of shallow groundwater, and the dense nature of the deeper onsite earth materials, the potential for earthquake induced liquefaction and lateral spreading beneath the proposed structures is considered low.

Preliminary laboratory test results indicate onsite earth materials exhibit an expansion potential of **VERY LOW** as classified in accordance with 2016 CBC Section 1803.5.3 and ASTM D4829.

Therefore, infiltration within the proposed WQMP areas will not encroach on any proposed structures and will not increase the risk of geologic hazards.

Design Rate and Recommended Factor of Safety

In accordance with the Riverside County The recommended factor of safety for the infiltration design is 2.

Based on the data presented in this report and the recommendations set forth herein, it is the opinion of Earth Strata Geotechnical Services that the WQMP area can be designed for an infiltration rate of 0.125 inches per hour in the vicinity of DR-1 and DR-2.

GRADING PLAN REVIEW AND CONSTRUCTION SERVICES

This report has been prepared for the exclusive use of **Mr. Mark Cooper** and their authorized representative. It likely does not contain sufficient information for other parties or other uses. Earth Strata should be engaged to review the final design plans and specifications prior to construction. This is to verify that the recommendations contained in this report have been properly incorporated into the project plans and specifications. Should Earth Strata not be accorded the opportunity to review the project plans and specifications, we are not responsibility for misinterpretation of our recommendations.

Earth Strata should be retained to provide observations during construction to validate this report. In order to allow for design changes in the event that the subsurface conditions differ from those anticipated prior to construction.

Earth Strata should review any changes in the project and modify and approve in writing the conclusions and recommendations of this report. This report and the drawings contained within are intended for design input purposes only and are not intended to act as construction drawings or specifications. In the

event that conditions encountered during grading or construction operations appear to be different than those indicated in this report, this office should be notified immediately, as revisions may be required.

REPORT LIMITATIONS

Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists, practicing at the time and location this report was prepared. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

Earth materials vary in type, strength, and other geotechnical properties between points of observation and exploration. Groundwater and moisture conditions can also vary due to natural processes or the works of man on this or adjacent properties. As a result, we do not and cannot have complete knowledge of the subsurface conditions beneath the subject property. No practical study can completely eliminate uncertainty with regard to the anticipated geotechnical conditions in connection with a subject property.

The conclusions and recommendations within this report are based upon the findings at the points of observation and are subject to confirmation by Earth Strata during construction. This report is considered valid for a period of one year from the time the report was issued.

This report was prepared with the understanding that it is the responsibility of the owner or their representative, to ensure that the conclusions and recommendations contained herein are brought to the attention of the other project consultants and are incorporated into the plans and specifications. The owners' contractor should properly implement the conclusions and recommendations during grading and construction, and notify the owner if they consider any of the recommendations presented herein to be unsafe or unsuitable.

Respectfully submitted,

EARTH STRATA GEOTECHNICAL SERVICES

Stephen M. Poole, PE 40219
President
Principal Engineer

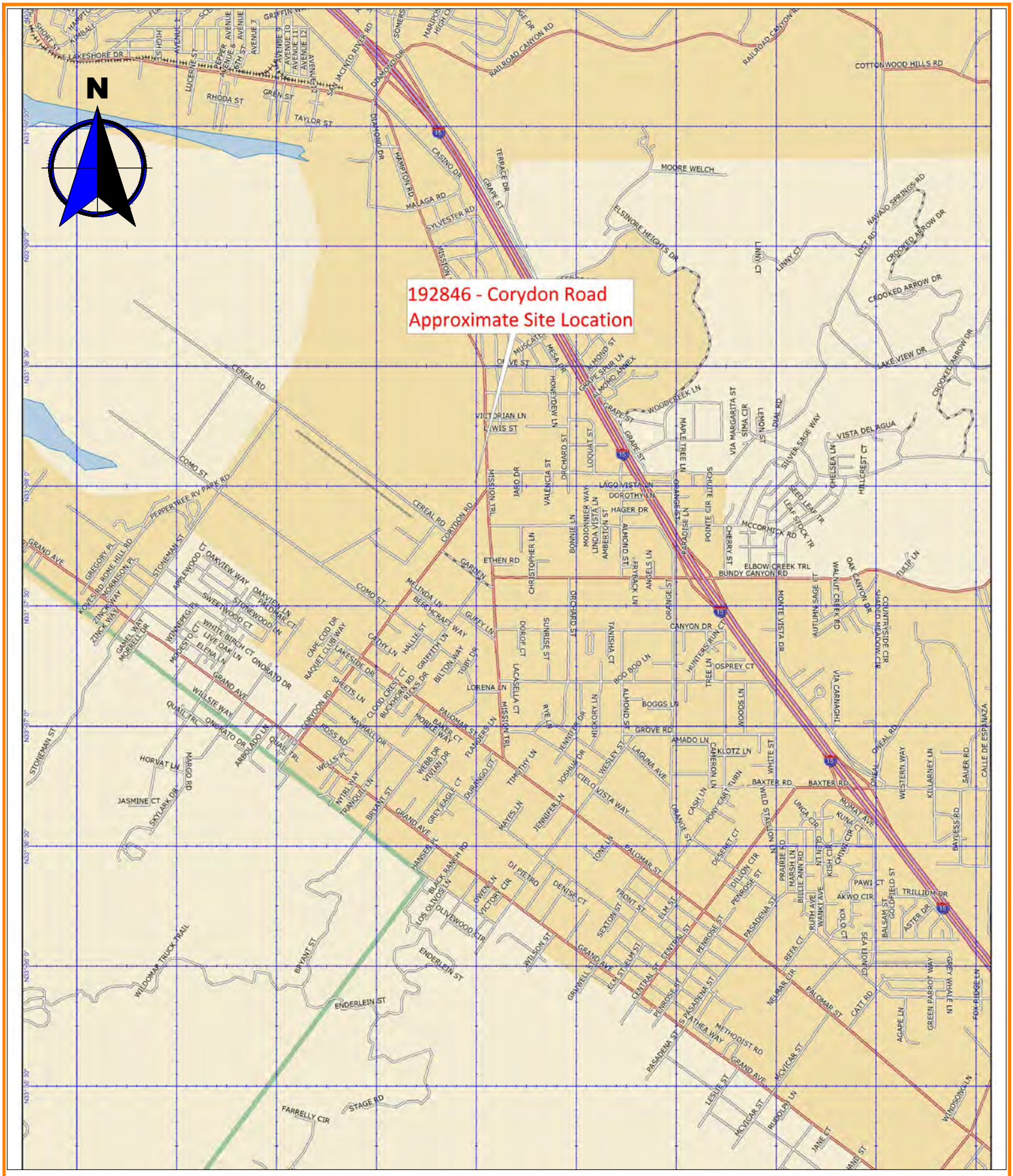
SMP/mam

Distribution: (1) Addressee

Attachments: Figure 1 – Vicinity Map *(Rear of Text)*
Appendix A – Exploratory Logs *(Rear of Text)*
Appendix B – Groundwater Data *(Rear of Text)*
Appendix C – Infiltration Test Sheets *(Rear of Text)*
Plate 1 – Infiltration Location Map *(Rear of Text)*

FIGURE 1

VICINITY MAP



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CORYDON ROAD		192846-12A
VICINITY MAP	SCALE 1:40,625	
	SEP 2019	FIGURE 1

APPENDIX A

EXPLORATORY LOGS

Geotechnical Boring Log B-1

Date: August 30, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 2**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0		0-5'				**Artificial Fill, Undocumented (Afu):**
					SM	Silty SAND; dark yellowish brown, moist, medium dense, fine to coarse sand
	28	2.5'	113.8	6.7		with clay and trace gravel
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, dry, dense, fine to coarse sand with clay
5	34	5'	116.8	6.0		
	23	7.5'	113.2	4.7		Dark yellowish brown, slightly moist, medium dense
10	32	10'	116.0	9.0		
15	26	15'	118.8	13.1		
20	31	20'	123.7	10.9	ML	Sandy SILT; olive brown, moist, stiff, fine to coarse sand
25	33	25'	99.6	25.9	CL	CLAY; light olive gray, moist, very stiff, fine sand
30						

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Geotechnical Boring Log B-1

Date: August 30, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 2 of 2**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
30	27	30'	91.9	29.8		Olive gray, moist, very stiff, fine to medium sand
40	28	40'	102.2	26.4		
45	58	45'	98.6	7.9	ML	Sandy SILT; light olive gray, dry, very stiff, fine to medium sand
						Total Depth: 46.5 feet
						No Groundwater
50						
55						
60						

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Geotechnical Boring Log B-2

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Fill, Undocumented (Afu):**
					SC	Clayey SAND; dark yellowish brown, dry, dense, fine to coarse sand with trace
	20	2.5'	115.8	8.8		gravel
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; dark yellowish brown, moist, medium dense, fine to coarse sand with
5	15	5'	103.7	15.2		clay
	22	7.5'	114.7	13.7	SC	Clayey SAND; dark yellowish brown, moist, medium dense, fine to coarse sand
10	33	10'	122.7	11.2		Yellowish brown
15	30	15'	118.4	8.6		
					ML	Sandy SILT; light olive gray to olive brown, moist, stiff, fine to medium sand
20	33	20'	126.9	10.8		
						Total Depth: 21.5 feet
						No Groundwater
25						
30						

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Geotechnical Boring Log B-3

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Fill, Undocumented (Afu):**
					SC	Clayey SAND; dark yellowish brown, slightly moist, very dense, fine to coarse
	72	2.5'	124.1	4.1		sand with trace gravel
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, dry, very dense, fine to coarse sand with clay and
5	23	5'	115.6	11.7		trace gravel
	19	7.5'	113.6	12.2		Dark yellowish brown
10	20	10'	107.0	10.2		
15	22	15'	116.3	11.0		
					CL	Sandy CLAY; olive gray, moist, stiff, fine sand
20	24	20'	95.6	25.1		
25						
30						

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Geotechnical Boring Log B-4

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Fill, Undocumented (Afu):**
					SM	Silty SAND; yellowish brown, slightly moist, medium dense, fine to coarse
	23	2.5'	103.9	5.6		sand with trace clay
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, dry, medium dense, fine to coarse sand
5	28	5'	113.0	2.7		
	24	7.5'	111.3	8.0	SC	Clayey SAND; yellowish brown, slightly moist, medium dense, fine to coarse sand
10	19	10'	113.8	11.4	SM	Silty SAND; yellowish brown, slightly moist, medium dense, fine to coarse sand
						with clay
15	28	15'	118.1	8.9		
20	26	20'	115.1	16.7		Fine to medium sand
						Total Depth: 21.5 feet
						No Groundwater
25						
30						

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Geotechnical Boring Log B-5

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Fill, Undocumented (Afu):**
					SM	Silty SAND; dark yellowish brown, slightly moist, medium dense, fine to coarse
	32	2.5'	126.5	6.2		sand
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, slightly moist, medium dense, fine to coarse sand
5	16	5'	101.4	8.3		with clay
	19	7.5'	109.4	13.3		
10	23	10'	107.7	11.9		
15	16	15'	115.5	13.1	SC	Clayey SAND; yellow brown, slightly moist, medium dense, fine to coarse sand
20	33	20'	118.6	12.8		Olive brown, moist, dense, fine to coarse sand
						Total Depth: 21.5 feet
						No Groundwater
25						
30						

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Geotechnical Boring Log B-6

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Filll, Undocumented (Afu):**
					SC	Clayey SAND; dark yellowish brown, moist, medium dense, fine to coarse sand
	13	2.5'	112.4	8.8		
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; dark yellowish brown, dry, medium dense, fine to coarse sand
5	11	5'	104.8	4.1		with trace clay
	17	7.5'	115.1	8.4		
10	30	10'	119.1	9.6		
15	26	15'	114.4	12.8	ML	Sandy SILT; yellowish brown, slightly moist, very stiff, fine sand
20	33	20'	110.2	13.7		
						Total Depth: 21.5 feet
						No Groundwater
25						
30						

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Geotechnical Boring Log B-7

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0		0-5'				**Artificial Fill, Undocumented (Afu):**
					SM	Silty SAND; yellowish brown, slightly moist, medium dense, fine to coarse
	26	2.5'	110.9	8.8		sand
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, slightly moist, medium dense, fine to coarse
5	22	5'	112.1	7.0		with clay
	36	7.5'	113.2	3.6		
10	21	10'	120.7	12.8		
15	28	15'	110.8	18.4	SC	Clayey SAND; yellowish brown, slightly moist, medium dense, fine to coarse sand
20	23	20'	90.3	28.2	CL	CLAY; light grayish brown, moist, stiff
						Total Depth: 21.5 feet
						No Groundwater
25						
30						

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Geotechnical Boring Log B-8

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Fill, Undocumented (Afu):**
					SC	Clayey SAND; yellowish brown, dry, medium dense, fine to coarse sand
	19	2.5'	118.9	8.1		
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, slightly moist, dry, medium dense, fine to coarse sand
5	16	5'	121.0	8.7		with trace clay
	18	7.5'	99.5	7.0		
10	44	10'	125.3	8.3		
15	32	15'	109.9	13.1		
						Total Depth: 16.5 feet
						No Groundwater
20						
25						
30						

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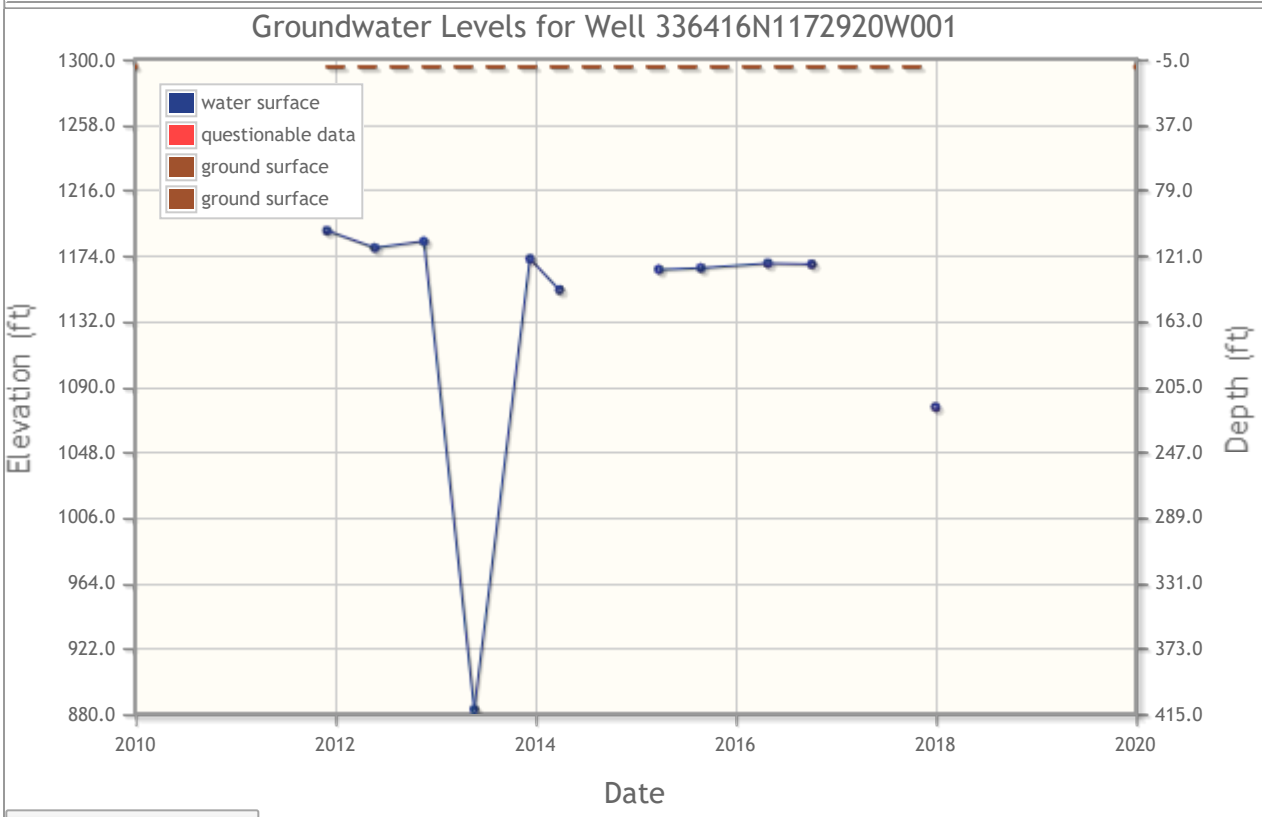
APPENDIX B

GROUNDWATER DATA

Groundwater Levels for Station 336416N1172920W001

Data for your selected well is shown in the tabbed interface below. To view data managed in the updated WDL tables, including data collected under the CASGEM program, click the "Recent Groundwater Level Data" tab. To view data stored in the former WDL tables, click the "Historical Groundwater Level Data" tab. To download the data in CSV format, click the "Download CSV File" button on the respective tab. Please note that the vertical datum for "recent" measurements is NAVD88, while the vertical datum for "historical" measurements is NGVD29. To change your well selection criteria, click the "Perform a New Well Search" button.

Station Data » **Recent Groundwater Level Data** » Historical Groundwater Level Data



Download CSV File

Date	RPE	GSE	RPWS	WSE	GS to WS	Msmt Code	CASGEM Msmt	Agency	Co
12/01/2011 12:00	1295.000	1295.000	105	1190	105		N	384	
05/23/2012 12:00	1295.000	1295.000	116	1179	116		N	384	
11/19/2012 12:00	1295.000	1295.000	111.8	1183.2	111.8		N	384	
05/20/2013 12:00	1295.000	1295.000	412.2	882.8	412.2		N	384	
12/10/2013 12:00	1295.000	1295.000	123	1172	123		N	384	
03/26/2014 12:00	1295.000	1295.000	143	1152	143		N	384	
10/18/2014 12:00	1295.000	1295.000				N-7	N	384	Do
03/24/2015 12:00	1295.000	1295.000	130	1165	130		N	384	
08/25/2015 12:00	1295.000	1295.000	129	1166	129		N	384	
04/26/2016 12:00	1295.000	1295.000	126	1169	126		N	384	
10/04/2016 12:00	1295.000	1295.000	126.5	1168.5	126.5		N	384	
05/12/2017 01:00	1295.000	1295.000				N-7	N	384	Did
12/29/2017 01:00	1295.000	1295.000	218.2	1076.8	218.2		N	384	

05/17/2018 01:00	1295.000	1295.000	N-3	N	384	can
12/18/2018 01:00	1295.000	1295.000	N-3	N	384	can
06/17/2019 01:00	1295.000	1295.000	N-3	N	384	can

All elevation and depth measurements are in feet. The vertical datum for recent measurements is NAVD88.

Perform a New Well Search

APPENDIX C

INFILTRATION TEST SHEETS

Test No.	DR-1	Location	See Map	Turf-Tec International - Record Chart for IN10-W - (12 & 24 Inch Infiltration Rings)

Project Identification:	192846-12A			**Constants**	**Area cm2**	**Depth of Liquid (cm)**	**Liquid Container Number**		**Marriotte Tube Volume**	Earth Strata Geotechnical Services, Inc.
Test Location:	DR-1			**Inner Ring**	729	10.0	1		10000	Geotechnical, Environmental and Materials Testing Consultants
Liquid Used:	TAP WATE	**pH:**	8.0	**Annular Ring**	2189	10.0	2		10000	www.ESGSINC.com (951) 397-8315
Tested By:	JMR2	**Date**	9/20/2019	**Liquid level maintained**	(X) Flow Valve	( ) Float Valve	( ) Mariotte Tubes			
Depth to water table:	> 30 Feet	**Depth of Test**	5'	**Penetration Depth of Outer Ring:**	9 cm	**Other**				

Trial #	Start / End	Date MM/DD/YY	Time HR:MIN	Time Increment /(Total)	Elapsed Time (Min)	Flow Readings				Liquid Temp ºF	Infiltration Rates				Ground Temperature		Remarks
						Inner Ring Reading cm	Inner Maroitte Tube Flow (ml)	Annular Space Reading cm	Annular Space Marriotte Tube Flow (ml)		Inner Infiltration Rate cm/h	Inner Infiltration Rate In/h	Annular Infiltration Rate cm/h	Annular Infiltration Rate In/h	Ground Temp Depth (cm)	Temp at Depth (c)	Weather conditions Etc...
1	Start Test	9/20/2019	11:40	0:25	25												
	End Test	9/20/2019	12:05	0:25			463		1853.3		1.53	**0.60**	2.03	**0.80**			
2	Start Test	9/20/2019	12:05	0:30	55												
	End Test	9/20/2019	12:35	0:55			347.5		1389.9		0.95	**0.38**	1.27	**0.50**			
3	Start Test	9/20/2019	12:35	0:30	85												
	End Test	9/20/2019	13:05	1:25			231.7		1389.9		0.64	**0.25**	1.27	**0.50**			
4	Start Test	9/20/2019	13:05	0:30	115												
	End Test	9/20/2019	13:35	1:55			231.7		1389.9		0.64	**0.25**	1.27	**0.50**			
5	Start Test	9/20/2019	13:35	0:30	145												
	End Test	9/20/2019	14:05	2:25			347.5		1389.9		0.95	**0.38**	1.27	**0.50**			
6	Start Test	9/20/2019	14:10	0:30	175												
	End Test	9/20/2019	14:40	2:55			213.7		926.66		0.59	**0.23**	0.85	**0.33**			
7	Start Test	9/20/2019	14:40	0:30	205												
	End Test	9/20/2019	15:10	3:25			231.7		926.66		0.64	**0.25**	0.85	**0.33**			
8	Start Test	9/20/2019	15:10	0:30	235												
	End Test	9/20/2019	15:40	3:55			231.7		926.66		0.64	**0.25**	0.85	**0.33**			
9	Start Test	9/20/2019	15:40	0:30	265												
	End Test	9/20/2019	16:10	4:25			231.7		926.66		0.64	**0.25**	0.85	**0.33**			
10	Start Test	9/20/2019	16:10	0:30	295												
	End Test	9/20/2019	16:40	4:55			231.7		926.66		0.64	**0.25**	0.85	**0.33**			

Turf-Tec International

Project Identification:	192846-12A		
Test Location:	DR-1		
Liquid Used:	TAP WATE	**pH:**	8.0
Tested By:	JMR2		
Depth to water table:	> 30 Feet		

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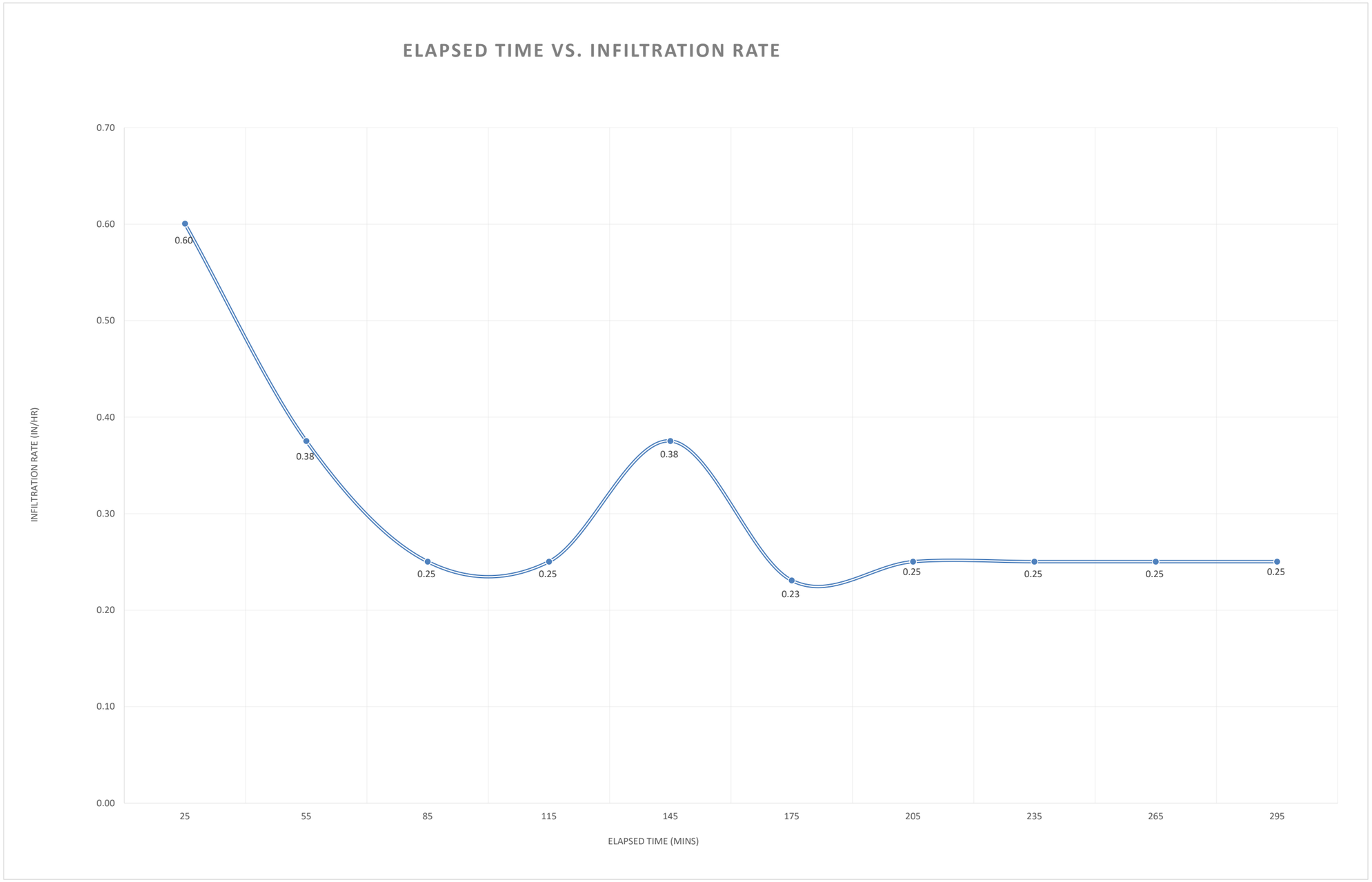

Test No.	DR-2	Location	See Map	Turf-Tec International - Record Chart for IN10-W - (12 & 24 Inch Infiltration Rings)

Project Identification:	192846-12A			**Constants**	**Area cm2**	**Depth of Liquid (cm)**	**Liquid Container Number**		**Marriotte Tube Volume**	Earth Strata Geotechnical Services, Inc.	
Test Location:	DR-2			**Inner Ring**	729	10.0	1		10000	Geotechnical, Environmental and Materials Testing Consultants	
Liquid Used:	TAP WATE	**pH:**	8.0	**Annular Ring**	2189	10.0	2		10000	www.ESGSINC.com (951) 397-8315	
Tested By:	JMR2	**Date**	9/20/2019	**Liquid level maintained**	(X) Flow Valve	( ) Float Valve	( ) Mariotte Tubes				
Depth to water table:	> 30 Feet	**Depth of Test**	5'	**Penetration Depth of Outer Ring:**	9 cm	**Other**					

Trial #	Start / End	Date MM/DD/YY	Time HR:MIN	Time Increment /(Total)	Elapsed Time (Min)	Flow Readings				Liquid Temp ºF	Infiltration Rates				Ground Temperature		Remarks
						Inner Ring Reading cm	Inner Maroitte Tube Flow (ml)	Annular Space Reading cm	Annular Space Marriotte Tube Flow (ml)		Inner Infiltration Rate cm/h	Inner Infiltration Rate In/h	Annular Infiltration Rate cm/h	Annular Infiltration Rate In/h	Ground Temp Depth (cm)	Temp at Depth (c)	Weather conditions Etc...
1	Start Test	9/20/2019	12:15	0:25	25												
	End Test	9/20/2019	12:40	0:25			463		1853.3		1.53	**0.60**	2.03	**0.80**			
2	Start Test	9/20/2019	12:40	0:30	55												
	End Test	9/20/2019	13:10	0:55			347.5		1389.9		0.95	**0.38**	1.27	**0.50**			
3	Start Test	9/20/2019	13:10	0:30	85												
	End Test	9/20/2019	13:40	1:25			347.5		1389.9		0.95	**0.38**	1.27	**0.50**			
4	Start Test	9/20/2019	13:40	0:30	115												
	End Test	9/20/2019	14:10	1:55			463.33		1389.9		1.27	**0.50**	1.27	**0.50**			
5	Start Test	9/20/2019	14:15	0:30	145												
	End Test	9/20/2019	14:45	2:25			231.7		926.66		0.64	**0.25**	0.85	**0.33**			
6	Start Test	9/20/2019	14:45	0:30	175												
	End Test	9/20/2019	15:15	2:55			231.7		926.66		0.64	**0.25**	0.85	**0.33**			
7	Start Test	9/20/2019	15:15	0:30	205												
	End Test	9/20/2019	15:45	3:25			231.7		926.66		0.64	**0.25**	0.85	**0.33**			
8	Start Test	9/20/2019	15:45	0:30	235												
	End Test	9/20/2019	16:15	3:55			231.7		463.33		0.64	**0.25**	0.42	**0.17**			
9	Start Test	9/20/2019	16:15	0:30	265												
	End Test	9/20/2019	16:45	4:25			231.7		463.33		0.64	**0.25**	0.42	**0.17**			

Turf-Tec International

Project Identification:	192846-12A		
Test Location:	DR-2		
Liquid Used:	TAP WATE	**pH:**	8.0
Tested By:	JMR2		
Depth to water table:	> 30 Feet		

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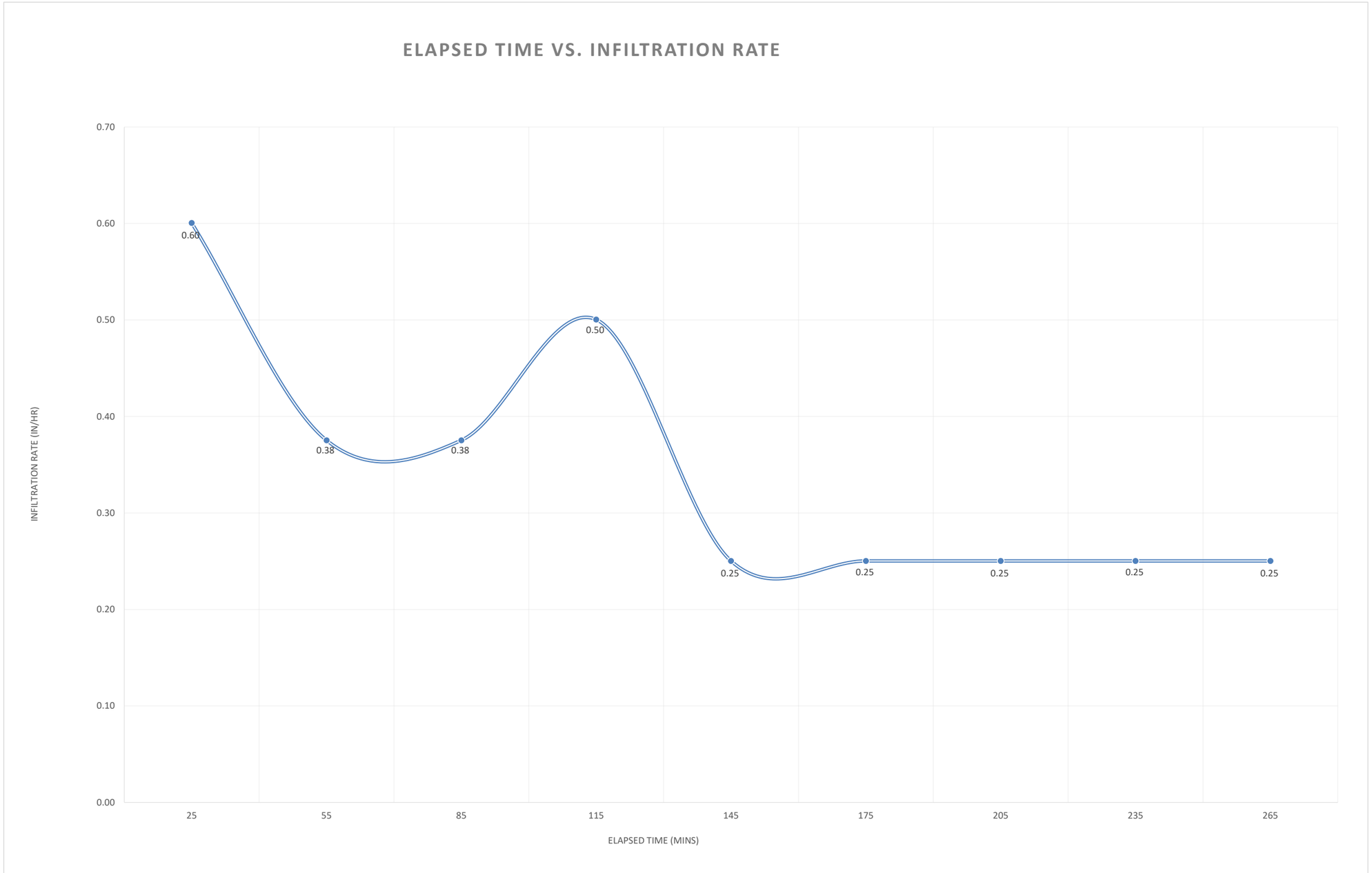

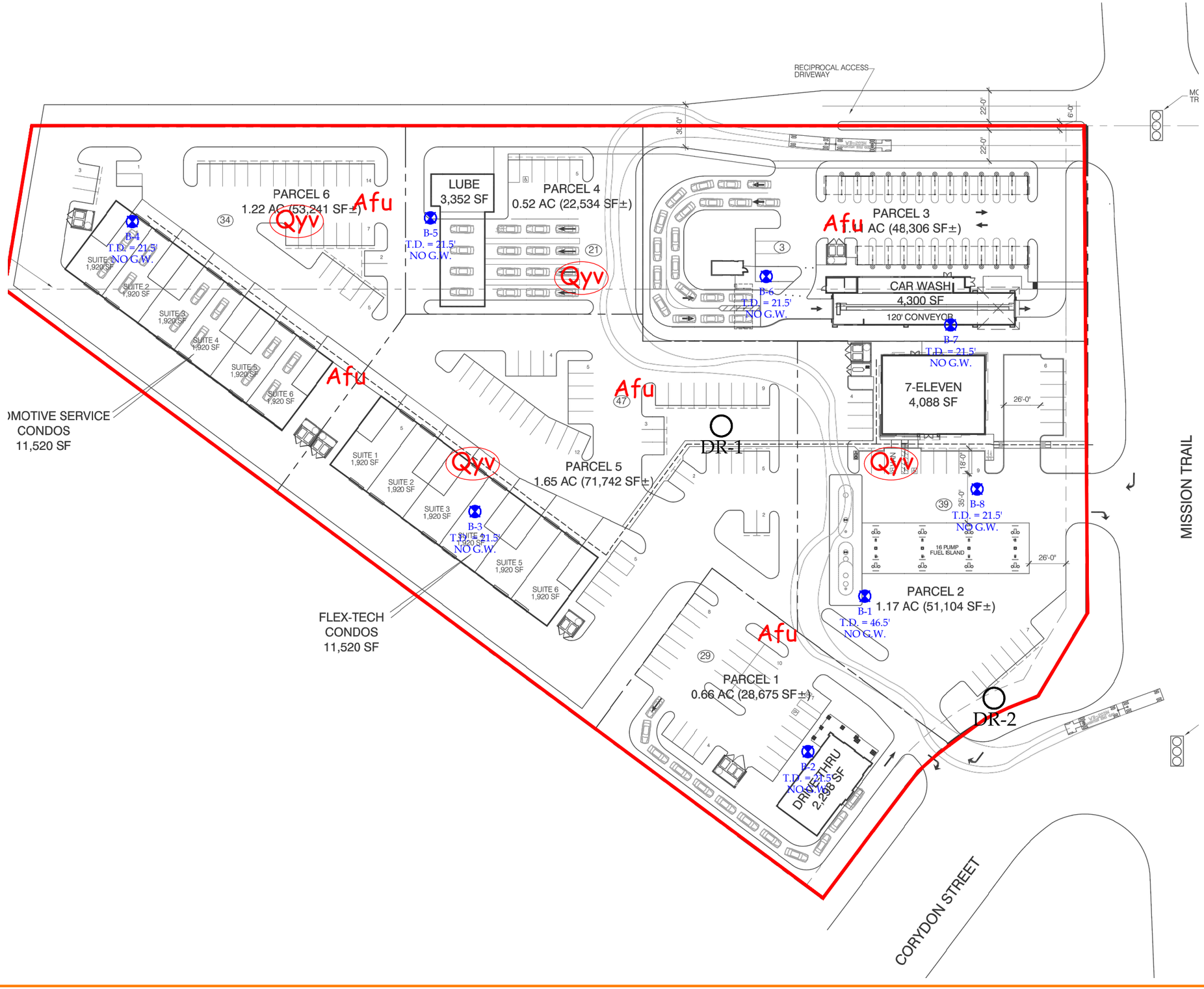

LEGEND

Locations are Approximate

Geologic Units

Afu - Artificial Fill, Undocumented

Qyv - Quaternary Young Alluvial Valley Deposits

Symbols

- Limits of Report

B-8 T.D. = 21.5' NO G.W. - Boring Location
Including Total Depth and Depth to Groundwater

DR-2 - Double Ring Test Location

North

INFILTRATION MAP

LOCATED NORTHWEST CORNER OF CORYDON ROAD AND MISSION TRAIL ROAD

CITY OF LAKE ELSINORE, RIVERSIDE COUNTY, CALIFORNIA

APN 370-050-026

PROJECT	PROPOSED COMMERCIAL PLAZA		
CLIENT	MR. MARK COOPER		
PROJECT NO.	192846-12A		
DATE	OCTOBER 2019		
SCALE	1:70		
DWG XREFS			
REVISION			
DRAWN BY	JDG	PLATE	1 OF 1

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Earth Strata Geotechnical Services, Inc.
Geotechnical, Environmental and Materials Testing Consultants

October 3, 2019 Project No. 192846-10A

Mr. Mark Cooper
R.E.D. CORYDON, LLC
38122 Stone Meadow Drive
Murrieta, CA 92562

Subject: **Preliminary Geotechnical Interpretive Report, Proposed Commercial Plaza, Assessor's Parcel Number 370-050-026, Located on the Northwest Corner of Corydon Road and Mission Trail Road, City of Lake Elsinore, Riverside County, California**

Earth Strata Geotechnical Services is pleased to present our preliminary geotechnical interpretive report for the proposed commercial plaza, Assessor's Parcel Number 370-050-026, located on the northwest corner of Corydon Road and Mission Trail Road in the City of Lake Elsinore, Riverside County, California. This work was performed in accordance with the scope of work described in our proposal, dated August 22, 2019. The purpose of this study is to evaluate the nature, distribution, engineering properties, and geologic strata underlying the site with respect to the proposed development.

Earth Strata Geotechnical Services appreciates the opportunity to offer our consultation and advice on this project. In the event that you have any questions, please do not hesitate to contact the undersigned at your earliest convenience.

Respectfully submitted,

EARTH STRATA GEOTECHNICAL SERVICES

Stephen M. Poole, PE, GE
Principal Engineer

Aaron G. Wood, PG, CEG
Principal Geologist

SMP/jf/mam

Distribution: (2) Addressee

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Figure 2 – Regional Geologic Map (Page 5)
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APPENDIX B – Exploratory Logs (Rear of Text)
APPENDIX C – Laboratory Procedures and Test Results (Rear of Text)
APPENDIX D – Seismicity (Rear of Text)
APPENDIX E – Liquefaction Analysis (Rear of Text)
APPENDIX F - Asphaltic Concrete Pavement Calculations (Rear of Text)
APPENDIX G – General Earthwork and Grading Specifications (Rear of Text)
Plate 1 – Geotechnical Map (In Pocket)

INTRODUCTION

Earth Strata Geotechnical Services is pleased to present our preliminary geotechnical interpretive report for the proposed development. The purpose of this study was to evaluate the nature, distribution, engineering properties, and geologic strata underlying the site with respect to the proposed development, and then provide preliminary grading and foundation design recommendations based on the plans you provided. The general location of the subject property is indicated on the Vicinity Map, Figure 1. The plans you provided were used as the base map to show geologic conditions within the subject site, see Geotechnical Map, Plate 1.

SITE DESCRIPTION

The subject property is located on the northwest corner of Mission Trail Road and Corydon Road in the City of Lake Elsinore, Riverside County, California. The approximate location of the site is shown on the Vicinity Map, Figure 1.

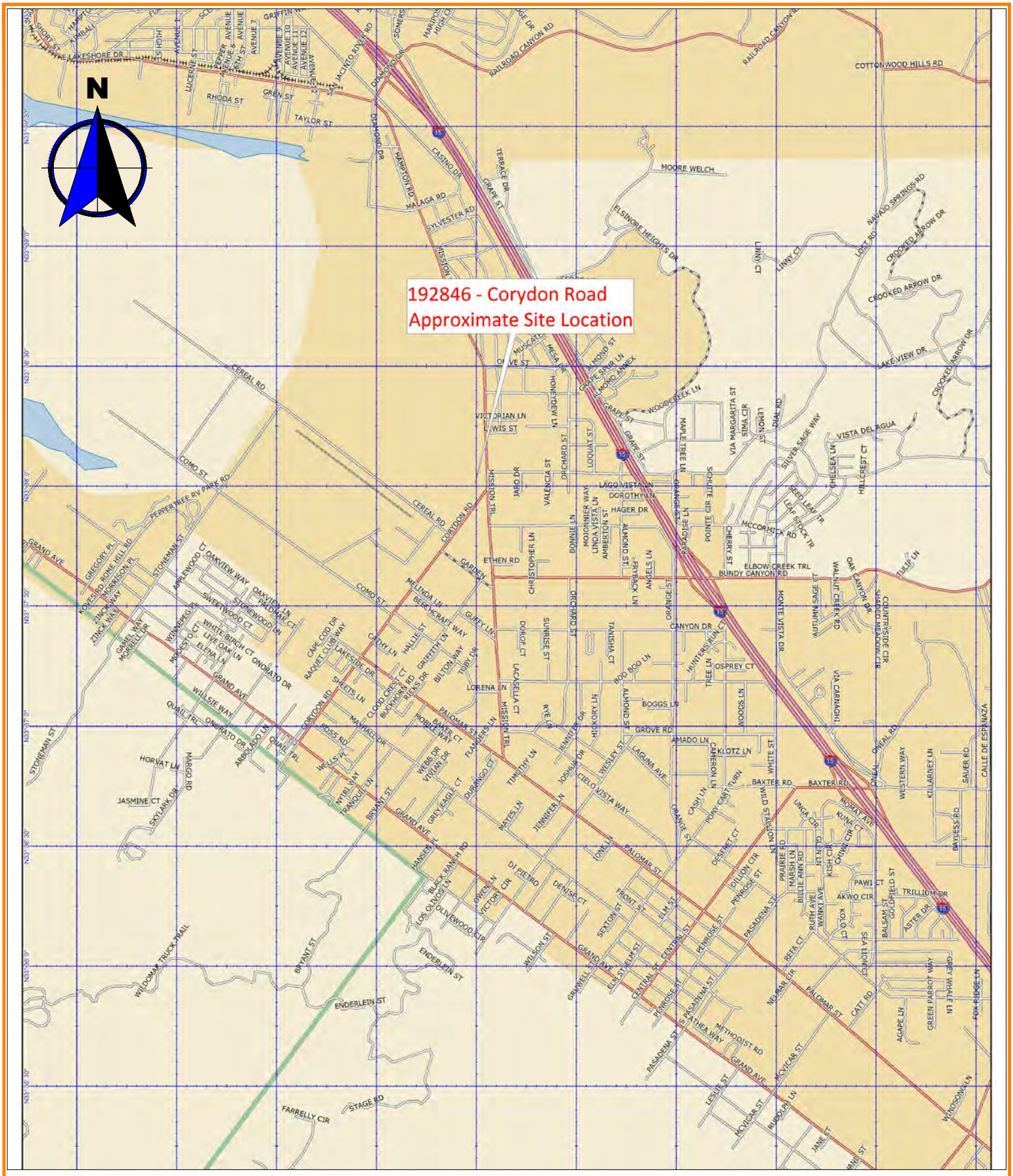
The subject property is comprised of approximately 4.26 acres of undeveloped land. The site has not been graded. Topographic relief at the subject property is relatively low with the terrain being generally flat. Elevations at the site range from approximately 1,264to 1,280 feet above mean sea level (msl), for a difference of about 16± feet across the entire site. Drainage within the subject property generally flows to the northwest.

The site is currently bordered by commercial development to the east, south, and west, as well as vacant property to the north. Most of the vegetation on the site consists of moderate amounts of annual weeds/grasses.

PROPOSED DEVELOPMENT AND GRADING

The proposed residential development is expected to consist of concrete, wood or steel framed one- and/or two-story structures utilizing slab on grade construction with associated streets, landscape areas, and utilities. The current development plans include seven (7) structures positioned throughout the site.

The plans provided by you were utilized in our exploration and form the base for our Geotechnical Map, Plate 1.



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CORYDON ROAD	192846-10A
VICINITY MAP	SCALE 1:40,625
	SEP 2019 / FIGURE 1

FIELD EXPLORATION AND LABORATORY TESTING

Field Exploration

Subsurface exploration within the subject site was performed on August 30, 2019 and September 6, 2019 for the exploratory excavations. A truck mounted hollow-stem-auger drill rig was utilized to drill eight (8) borings throughout the site to a maximum depth of 46 ½ feet. An underground utilities clearance was obtained from Underground Service Alert of Southern California, prior to the subsurface exploration.

Earth materials encountered during exploration were classified and logged in general accordance with the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) of ASTM D 2488. Upon completion of laboratory testing, exploratory logs and sample descriptions may have been reconciled to reflect laboratory test results with regard to ASTM D 2487.

Associated with the subsurface exploration was the collection of bulk (disturbed) samples and relatively undisturbed samples of earth materials for laboratory testing and analysis. The relatively undisturbed samples were obtained with a 3 inch outside diameter modified California split-spoon sampler lined with 1-inch-high brass rings. Samples obtained using a hollow stem auger drill rig, were mechanically driven with successive 30 inch drops of a 140-pound automatic trip safety hammer. The blow count per one-foot increment was recorded in the boring logs. The central portions of the driven samples were placed in sealed containers and transported to our laboratory for testing and analysis. The approximate exploratory locations are shown on Plate 1 and descriptive logs are presented in Appendix B.

Laboratory Testing

Maximum dry density/optimum moisture content, expansion potential, R-value, pH, resistivity, sulfate content, chloride content, and in-situ density/moisture content were determined for selected undisturbed and bulk samples of earth materials, considered representative of those encountered. An evaluation of the test data is reflected throughout the Conclusions and Recommendations section of this report. A brief description of laboratory test criteria and summaries of test data are presented in Appendix C.

FINDINGS

Regional Geology

Regionally, the site is located in the Peninsular Ranges Geomorphic Province of California. The Peninsular Ranges are characterized by northwest trending steep mountain ranges separated by sediment filled elongated valleys. The dominant structural geologic features reflect the northwest trend of the province. Associated with and subparallel to the San Andreas Fault are the San Jacinto Fault, Newport-Inglewood, and the Whittier-Elsinore Fault. The Santa Ana Mountains abut the west side of the Elsinore Fault while the Perris Block forms the other side of the fault zone to the east. The Perris Block is bounded to the east by the San Jacinto Fault. The northern perimeter of the Los Angeles basin forms part of a northerly dipping blind thrust fault at the boundary between the Peninsular Ranges Province and the Transverse Range Province.

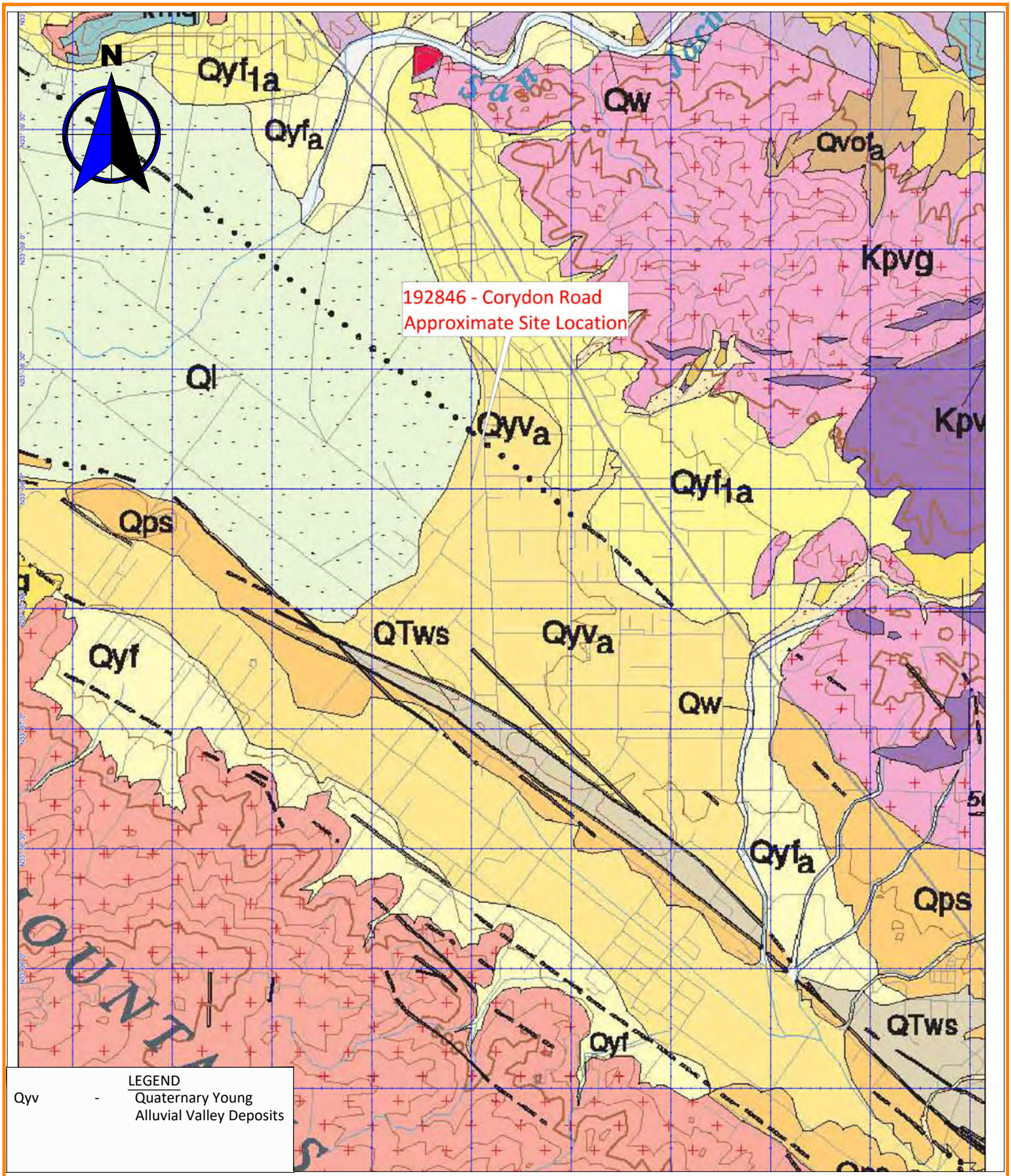
The mountainous regions within the Peninsular Ranges Province are comprised of Pre-Cretaceous, metasedimentary, and metavolcanic rocks along with Cretaceous plutonic rocks of the Southern California Batholith. The low lying areas are primarily comprised of Tertiary and Quaternary non-marine alluvial sediments consisting of alluvial deposits, sandstones, claystones, siltstones, conglomerates, and occasional volcanic units. A map illustrating the regional geology is presented on the Regional Geologic Map, Figure 2.

Local Geology

The earth materials on the site are primarily comprised of artificial fill and Quaternary young alluvial materials. A general description of the dominant earth materials observed on the site is provided below:

- Artificial Fill, Undocumented (map symbol Afu): Undocumented artificial fill materials were encountered throughout the site within the upper 2 feet during exploration. These materials are typically locally derived from the native materials and consist generally of yellowish brown to dark yellowish brown silty sand and clayey sand. These materials are generally inconsistent, poorly consolidated fills.

- Quaternary Young Alluvial Valley Deposits (map symbol Qyv): Quaternary young alluvial deposits were encountered to a maximum depth of 46 ½ feet. These alluvial deposits consist predominately of interlayered yellowish brown to dark yellowish brown, fine to coarse grained silty sand as well as olive brown to light olive gray sandy clay and sandy silt. These deposits were generally noted to be in a slightly moist to moist, medium dense to dense state.



LEGEND

Qyv - Quaternary Young Alluvial Valley Deposits

REFERNCES: Morton, D.M., Hauser, Rachel M., and Ruppert, Kelly R., 2004, Preliminary Digital Geologic Map of the San Bernardino and Santa Ana 30' x 60' Quadrangle, Southern California, Version 2.0: U.S. Geological Survey Open-File Report 99-0172.

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Earth Strata Geotechnical Services, Inc.
Geotechnical, Environmental and Materials Testing Consultants
www.ESGSINC.com (951) 397-8315

CORYDON ROAD | 192846-10A

REGIONAL GEOLOGIC MAP | SCALE 1:40,625 | SEP 2019 | FIGURE 2

Faulting

The project is located in a seismically active region and as a result, significant ground shaking will likely impact the site within the design life of the proposed project. The geologic structure of the entire southern California area is dominated by northwest-trending faults associated with the San Andreas Fault system, which accommodates for most of the right lateral movement associated with the relative motion between the Pacific and North American tectonic plates. Known active faults within this system include the Newport-Inglewood, Whittier-Elsinore, San Jacinto and San Andreas Faults.

No active faults are known to project through the site and the site is not located within an Alquist-Priolo Earthquake Fault Zone, established by the State of California to restrict the construction of new habitable structures across identifiable traces of known active faults. An active fault is defined by the State of California as having surface displacement within the past 11,000 years or during the Holocene geologic time period. Based on our mapping of the subject site, review of current and historical aerial imagery, lack of lineaments indicative of active faulting, and the data compiled during the preparation of this report, it is our interpretation that the potential for surface rupture to adversely impact the proposed structures is very low to remote.

Based on our review of regional geologic maps and applicable computer programs (USGS 2008 Interactive Deaggregation, Caltrans ARS online, and USGS Earthquake Hazard Programs), the Elsinore Fault with an approximate source to site distance of 0.38 kilometers is the closest known active fault anticipated to produce the highest ground accelerations, with an anticipated maximum modal magnitude of 7.7. A list of faults as well as a list of significant historical seismic events within a 100km radius of the subject site are included in Appendix D.

Landslides

Landslide debris was not observed during our subsurface exploration and no ancient landslides are known to exist on the site. No landslides are known to exist, or have been mapped, in the vicinity of the site. Geologic mapping of the site conducted during our investigation, and review of aerial imagery of the site, reveal no geomorphic expressions indicative of landsliding. No oversteepened slopes exist on the site or are proposed.

CONCLUSIONS AND RECOMMENDATIONS

General

From geotechnical and engineering geologic points of view, the subject property is considered suitable for the proposed development, provided the following conclusions and recommendations are incorporated into the plans and are implemented during construction.

Earthwork

Earthwork and Grading

The provisions of the 2016 California Building Code (CBC), including the General Earthwork and Grading Specifications in the last Appendix of this report, should be applied to all earthwork and grading operations, as well as in accordance with all applicable grading codes and requirements of the appropriate reviewing agency. Unless specifically revised or amended herein, grading operations should also be performed in accordance with applicable provisions of our General Earthwork and Grading Specifications within the last appendix of this report.

Clearing and Grubbing

Vegetation including trees, grasses, weeds, brush, shrubs, or any other debris should be stripped from the areas to be graded and properly disposed of offsite. In addition, laborers should be utilized to remove any roots, branches, or other deleterious materials during grading operations.

Earth Strata Geotechnical Services should be notified at the appropriate times to provide observation and testing services during Clearing and Grubbing operations. Any buried structures or unanticipated conditions should be brought to our immediate attention.

Excavation Characteristics

Based on the results of our exploration and experience with similar projects in similar settings, the near surface earth materials, will be readily excavated with conventional earth moving equipment.

Groundwater

Groundwater was not observed during our subsurface exploration. It should be noted that localized groundwater could be encountered during grading due to the limited number of exploratory locations or other factors.

Ground Preparation for Fill Areas

For each area to receive compacted fill, the removal of low density, compressible earth materials, such as undocumented artificial fill, should continue until firm competent alluvium is encountered. Removal excavations are subject to verification by the project engineer, geologist or their representative. Prior to placing compacted fills, the exposed bottom in each removal area should be scarified to a depth of 6 inches or more, watered or air dried as necessary to achieve near optimum moisture conditions and then compacted to a minimum of 90 percent of the maximum dry density determined by ASTM D 1557.

The intent of remedial grading is to diminish the potential for hydro-consolidation, slope instability, and/or settlement. Remedial grading should extend beyond the perimeter of the proposed structures a horizontal distance equal to the depth of excavation or a minimum of 5 feet, whichever is greater. For cursory purposes the anticipated removal depths are shown on the enclosed

Geotechnical Map, Plate 1. In general, the anticipated removal depths should vary from 3 to 5 feet below existing grade.

Wet Removals

Wet alluvial materials will probably not be encountered within the low lying areas of the site. If removals of wet alluvial materials are required, special grading equipment and procedures can greatly reduce overall costs. Careful planning by an experienced grading contractor can reduce the need for special equipment, such as swamp cats, draglines, excavators, pumps, and top loading earthmovers. Possible solutions may include the placement of imported angular rock and/or geotextile ground reinforcement. More specific recommendations can be provided based on the actual conditions encountered. Drying or mixing of wet materials with dry materials will be needed to bring the wet materials to near optimum moisture prior to placing wet materials into compacted fills.

Oversize Rock

Oversize rock is not expected to be encountered during grading. Oversize rock that is encountered (i.e., rock exceeding a maximum dimension of 12 inches) should be disposed of offsite or stockpiled onsite and crushed for future use. The disposal of oversize rock is discussed in greater detail in General Earthwork and Grading Specifications within the last appendix of this report.

Compacted Fill Placement

Compacted fill materials should be placed in 6 to 8 inch maximum (uncompacted) lifts, watered or air dried as necessary to achieve uniform near optimum moisture content and then compacted to a minimum of 90 percent of the maximum dry density determined by ASTM D 1557.

Import Earth Materials

Should import earth materials be needed to achieve final design grades, all potential import materials should be free of deleterious/oversize materials, non-expansive, and approved by the project geotechnical consultant prior to delivery onsite.

Fill Slopes

When properly constructed, fill slopes up to 10 feet high with inclinations of 2:1 (h:v) or flatter are considered to be grossly stable. Keyways are required at the toe of all fill slopes higher than 5 feet and steeper than 5:1 (h:v). Keyways should be a minimum of 10 feet wide and 2 feet into competent earth materials, as measured on the downhill side. In order to establish keyway removals, backcuts should be cut no steeper than 1:1 or as recommended by the geotechnical engineer or engineering geologist. Compacted fill should be benched into competent earth materials.

Cut Slopes

When properly constructed, cut slopes into older alluvium up to 10 feet high with inclinations of 2:1 (h:v) or flatter are considered grossly stable. Cut slopes should be observed by the engineering geologist or his representative during grading, but are anticipated to be stable.

Stabilization Fills

Currently, stabilization fills will not be required for cut slopes in the alluvium. Our engineering geologist or his representative should be called to evaluate all slopes during grading. In the event that unfavorable geologic conditions are encountered, recommendations for stabilization fills or flatter slopes will be provided.

Fill Over Cut Slopes

The fill portion of fill over cut slopes should not be constructed until the cut portion of the slope has been cut to finish grade. The earth materials and geologic structure exposed along the cut slope should be evaluated with regard to suitability for compacted fills or foundations and for stability. If the cut materials are determined to be competent, then the construction of the keyway and subdrain system may commence or additional remedial recommendations will be provided.

Temporary Backcuts

It is the responsibility of the grading contractor to follow all Cal-OSHA requirements with regard to excavation safety. Where existing developments are upslope, adequate slope stability to protect those developments must be maintained. Temporary backcuts will be required to accomplish removals of unsuitable materials and possibly, to perform canyon removals, stabilization fills, and/or keyways. Backcuts should be excavated at a gradient of 1:1 (h:v) or flatter. Flatter backcuts may be required where geologic structure or earth materials are unfavorable. It is imperative that grading schedules minimize the exposure time of the unsupported excavations. All excavations should be stabilized within 30 days of initial excavation.

Cut/Fill Transitions

Cut/fill transitions should be eliminated from all building areas where the depth of fill placed within the "fill" portion exceeds proposed footing depths. This is to diminish distress to structures resulting from excessive differential settlement. The entire foundation of each structure should be founded on a uniform bearing material. This should be accomplished by overexcavating the "cut" portion and replacing the excavated materials as properly compacted fill. Refer to the following table for recommended depths of overexcavation.

DEPTH OF FILL ("fill" portion)	DEPTH OF OVEREXCAVATION ("cut" portion)
Up to 5 feet	Equal Depth
5 to 10 feet	5 feet
Greater than 10 feet	One-half the thickness of fill placed on the "fill" portion (10 feet maximum)

Overexcavation of the "cut" portion should extend beyond the building perimeter a horizontal distance equal to the depth of overexcavation or a minimum of 5 feet, whichever is greater.

Cut Areas

In cut areas, an area a minimum of 5 feet beyond the footprint of the proposed structures should overexcavated until; competent bottoms are achieved; to a minimum 3 feet below the proposed foundations; or per the Overexcavation Table above; (whichever is greater) and replaced with compacted fill. Final determination of areas that require overexcavation should be determined in the field by a representative of Earth Strata Geotechnical Services.

Shrinkage, Bulking and Subsidence

Volumetric changes in earth material quantities will occur when poorly consolidated earth materials are replaced with properly compacted fill. Estimates of the percent shrinkage/bulking factors for the various geologic units observed on the subject property are based on in-place densities and on the estimated average percent of relative compaction achieved during grading.

GEOLOGIC UNIT	SHRINKAGE (%)
Artificial Fill	10 to 15
Alluvium	5 to 10

Subsidence from scarification and recompaction of exposed bottom surfaces is expected to be negligible to approximately 0.01 foot.

The estimates of shrinkage/bulking and subsidence are intended as an aid for project engineers in determining earthwork quantities. Since many variables can affect the accuracy of these estimates, they should be used with caution and contingency plans should be in place for balancing the project.

Geotechnical Observations

Clearing operations, removal of unsuitable materials, and general grading procedures should be observed by the project geotechnical consultant or his representative. No compacted fill should be placed without observations by the geotechnical consultant or his representative to verify the adequacy of the removals.

The project geotechnical consultant or his representative should be present to observe grading operations and to check that minimum compaction requirements and proper lift thicknesses are being met, as well as to verify compliance with the other recommendations presented herein.

Post Grading Considerations

Slope Landscaping and Maintenance

Adequate slope and building pad drainage is essential for the long term performance of the subject site. The gross stability of graded slopes should not be adversely affected, provided all drainage provisions are properly constructed and maintained. Engineered slopes should be landscaped with deep rooted, drought tolerant maintenance free plant species, as recommended by the project landscape architect.

Site Drainage

Control of site drainage is important for the performance of the proposed project. Roof gutters are recommended for the proposed structures. Pad and roof drainage should be collected and transferred to driveways, adjacent streets, storm-drain facilities, or other locations approved by the building official in non-erosive drainage devices. Drainage should not be allowed to pond on the pad or against any foundation or retaining wall. Drainage should not be allowed to flow uncontrolled over any descending slope. Planters located within retaining wall backfill should be sealed to prevent moisture intrusion into the backfill. Planters located next to structures should be sealed to the depth of the footings. Drainage control devices require periodic cleaning, testing and maintenance to remain effective.

At a minimum, pad drainage should be designed at the minimum gradients required by the CBC. To divert water away from foundations, the ground surface adjacent to foundations should also be graded at the minimum gradients required per the CBC.

Utility Trenches

All utility trench backfill should be compacted at near optimum moisture to a minimum of 90 percent of the maximum dry density determined by ASTM D 1557. For utility trench backfill within pavement areas the upper 6 inches of subgrade materials should be compacted to 95 percent of the maximum dry density determined by ASTM D 1557. This includes within the street right-of-ways, utility easements, under footings, sidewalks, driveways and building floor slabs, as well as within or adjacent to any slopes. Backfill should be placed in approximately 6 to 8 inch maximum loose lifts and then mechanically compacted with a hydro-hammer, rolling with a sheepsfoot, pneumatic tampers, or similar equipment. The utility trenches should be tested by the project geotechnical engineer or their representative to verify minimum compaction requirements are obtained.

In order to minimize the penetration of moisture below building slabs, all utility trenches should be backfilled with compacted fill, lean concrete or concrete slurry where they undercut the perimeter foundation. Utility trenches that are proposed parallel to any building footings (interior and/or exterior trenches), should not be located within a 1:1 (h:v) plane projected downward from the outside bottom edge of the footing.

SEISMIC DESIGN CONSIDERATIONS

Ground Motions

Structures are required to be designed and constructed to resist the effects of seismic ground motions as provided in the 2016 California Building Code Section 1613. The design is dependent on the site class, occupancy category I, II, III, or IV, mapped spectral accelerations for short periods (S_s), and mapped spectral acceleration for a 1-second period (S_1).

In order for structural design to comply with the 2016 CBC, the USGS "US Seismic Design Maps" online tool was used to compile spectral accelerations for the subject property based on data and maps jointly compiled by the United States Geological Survey (USGS) and the California Geological Survey (CGS). The data found in the following table is based on the Maximum Considered Earthquake (MCE) with 5% damped ground motions having a 2% probability of being exceeded in 50 years (2,475 year return period).

The seismic design coefficients were determined by a combination of the site class, mapped spectral accelerations, and occupancy category. The following seismic design coefficients should be implemented during design of the proposed structures. Summaries of the Seismic Hazard Deaggregation graphs and test data are presented in Appendix D.

2016 CBC	FACTOR
Site Location	Latitude: 33.633439° (North) Longitude: -117.291848°(West)
Site Class	D
Mapped Spectral Accelerations for short periods, S_s	2.389 g
Mapped Spectral Accelerations for 1-Second Period, S_1	0.965 g
Maximum Considered Earthquake Spectral Response Acceleration for Short Periods, S_{ms}	2.389 g
Maximum Considered Earthquake Spectral Response Acceleration for 1-Second Period, S_{m1}	1.447 g
Design Spectral Response Acceleration for Short Periods, S_{DS}	1.593 g
Design Spectral Response Acceleration for 1-Second Period, S_{D1}	0.965 g
Seismic Design Category	S_1 greater than .15, E
Importance Factor Based on Occupancy Category	III

We performed the probabilistic seismic hazard assessment for the site in accordance with the 2016 CBC, Section 1803.5.11 and 1803.5.12. The probabilistic seismic hazard maps and data files were jointly prepared by the United States Geological Survey (USGS) and the California Geological Survey (CGS) and can be found at the CGS Probabilistic Seismic Hazards Mapping Ground Motion Page. Actual ground shaking intensities at the site may be substantially higher or lower based on complex variables such as the near source directivity effects, depth and consistency of earth materials, topography, geologic structure, direction of fault rupture, and seismic wave reflection, refraction, and attenuation rates. The mean peak ground acceleration was calculated to be 0.958 g.

Secondary Seismic Hazards

Secondary effects of seismic shaking considered as potential hazards include several types of ground failure as well as induced flooding. Different types of ground failure, which could occur as a consequence of severe ground shaking at the site, include landslides, ground lurching, shallow ground rupture, and liquefaction/lateral spreading. The probability of occurrence of each type of ground failure depends on the severity of the earthquake, distance from faults, topography, the state of subsurface earth materials, groundwater conditions, and other factors. Based on our experience, subsurface exploration, and laboratory testing, all of the above secondary effects of seismic activity are considered unlikely.

Seismically induced flooding is normally a consequence of a tsunami (seismic sea wave), a seiche (i.e., a wave-like oscillation of surface water in an enclosed basin that may be initiated by a strong earthquake) or failure of a major reservoir or retention system up gradient of the site. Since the site is at an elevation of more than 1,200 feet above mean sea level and is located more than 30 miles inland from the nearest coastline of the Pacific Ocean, the potential for seismically induced flooding due to a tsunami is considered nonexistent. Since no enclosed bodies of water lie adjacent to or up gradient of the site, the likelihood for induced flooding due to a dam failure or a seiche overcoming the dam's freeboard is considered nonexistent.

Liquefaction and Lateral Spreading

Liquefaction occurs as a result of a substantial loss of shear strength or shearing resistance in loose, saturated, cohesionless earth materials subjected to earthquake induced ground shaking. Potential impacts from liquefaction include loss of bearing capacity, liquefaction related settlement, lateral movements, and surface manifestation such as sand boils. Seismically induced settlement occurs when loose sandy soils become denser when subjected to shaking during an earthquake. The three factors determining whether a site is likely to be subject to liquefaction include seismic shaking, type and consistency of earth materials, and groundwater level. The proposed structures will be supported by compacted fill and competent alluvium, with groundwater at a depth greater than 50 feet. As such, the potential for earthquake induced liquefaction and lateral spreading beneath the proposed structures is considered very low to remote due to the recommended compacted fill, relatively low groundwater level, and the dense nature of the deeper onsite earth materials.

Liquefaction analyses were performed for the existing un-graded and graded conditions, using a conservative groundwater level of 5 feet to represent the historic high groundwater level. We estimate that dynamic settlement of sands due to liquefaction will be on the order of 0.0 inches. The liquefaction potential and dynamic settlement of sands analyses are included within the appendices of this report.

TENTATIVE FOUNDATION DESIGN RECOMMENDATIONS

General

Provided grading is performed in accordance with the recommendations of this report, shallow foundations are considered feasible for support of the proposed structures. Tentative foundation recommendations are provided herein and graphic presentations of relevant recommendations may also be included on the enclosed map.

Allowable Bearing Values

An allowable bearing value of 2,500 pounds per square foot (psf) is recommended for design of 24-inch square pad footings and 12-inch-wide continuous footings founded at a minimum depth of 12 inches below the lowest adjacent final grade. This value may be increased by 20 percent for each additional 1-foot of width and/or depth to a maximum value of 3,000 psf. Recommended allowable bearing values include both dead and frequently applied live loads and may be increased by one third when designing for short duration wind or seismic forces.

Settlement

Based on the settlement characteristics of the earth materials that underlie the building sites and the anticipated loading, we estimate that the maximum total settlement of the footings will be less than approximately ¾ inch. Differential settlement is expected to be about ½ inch over a horizontal distance of approximately 20 feet, for an angular distortion ratio of 1:480. It is anticipated that the majority of the settlement will occur during construction or shortly after the initial application of loading.

The above settlement estimates are based on the assumption that the grading and construction are performed in accordance with the recommendations presented in this report and that the project geotechnical consultant will observe or test the earth material conditions in the footing excavations.

Lateral Resistance

Passive earth pressure of 250 psf per foot of depth to a maximum value of 2,500 psf may be used to establish lateral bearing resistance for footings. For areas coved with hardscape, passive earth pressure may be taken from the surface. For areas without hardscape, the upper 12 inches of the soil profile must be neglected when calculating passive earth pressure. A coefficient of friction of 0.36 times the dead load forces may be used between concrete and the supporting earth materials to determine lateral sliding resistance. The above values may be increased by one-third when designing for short duration wind or seismic forces. When combining passive and friction for lateral resistance, the passive component should be reduced by one third. In no case shall the lateral sliding resistance exceed one-half the dead load for clay, sandy clay, sandy silty clay, silty clay, and clayey silt.

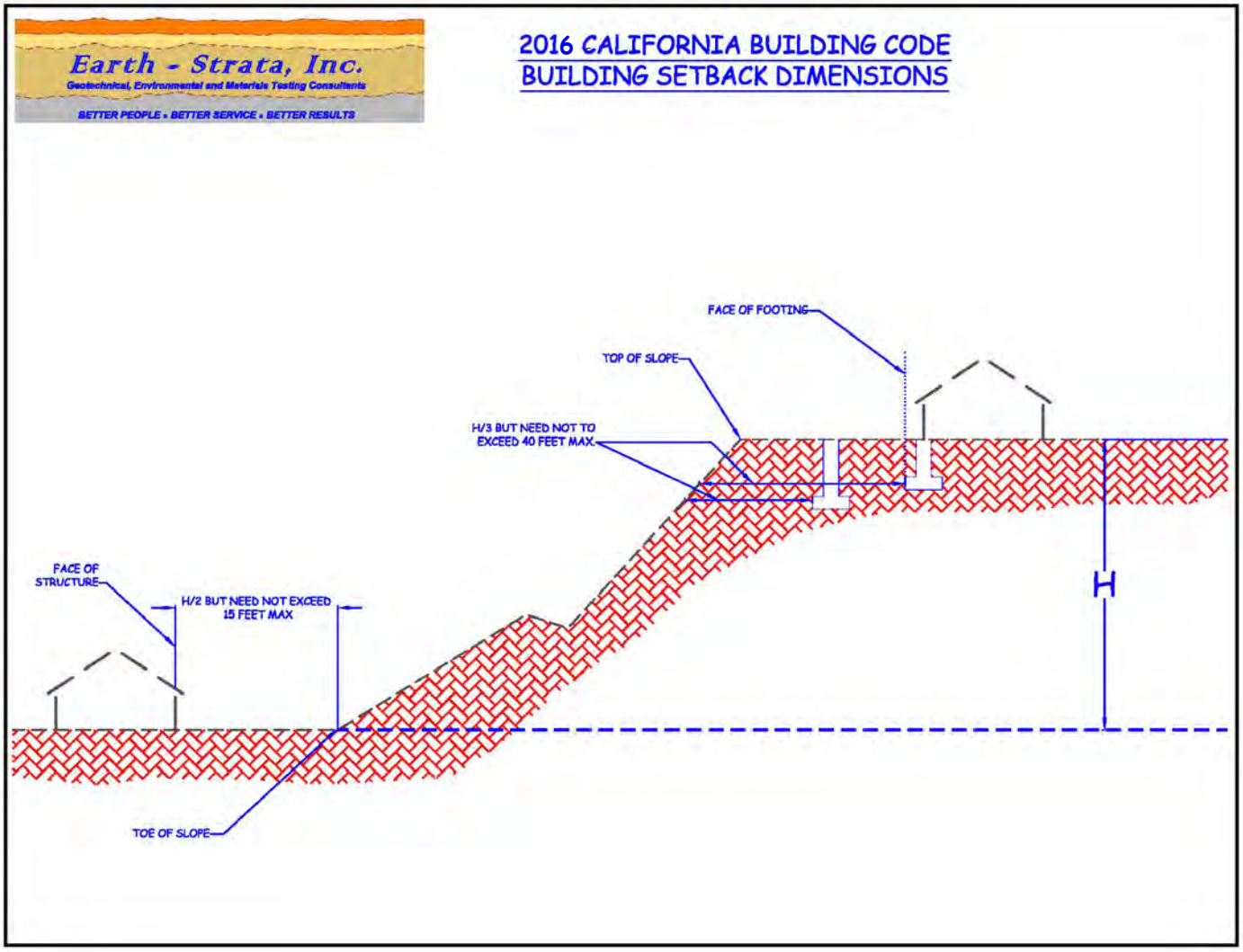
The above lateral resistance values are based on footings for an entire structure being placed directly against either compacted fill or competent alluvium.

Structural Setbacks and Building Clearance

Structural setbacks are required per the 2016 California Building Code (CBC). Additional structural setbacks are not required due to geologic or geotechnical conditions within the site. Improvements constructed in close proximity to natural or properly engineered and compacted slopes can, over time, be affected by natural processes including gravity forces, weathering, and long term secondary settlement. As a result, the CBC requires that buildings and structures be setback or footings deepened to resist the influence of these processes.

For structures that are planned near ascending and descending slopes, the footings should be embedded to satisfy the requirements presented in the CBC, Section 1808.7 as illustrated in the following Foundation Clearances from Slopes diagram.

FOUNDATION CLEARANCES FROM SLOPES



When determining the required clearance from ascending slopes with a retaining wall at the toe, the height of the slope shall be measured from the top of the wall to the top of the slope.

Foundation Observations

In accordance with the 2016 CBC and prior to the placement of forms, concrete, or steel, all foundation excavations should be observed by the geologist, engineer, or his representative to verify that they have been excavated into competent bearing materials. The excavations should be per the approved plans, moistened, cleaned of all loose materials, trimmed neat, level, and square. Any moisture softened earth materials should be removed prior to steel or concrete placement.

Earth materials from foundation excavations should not be placed in slab on grade areas unless the materials are tested for expansion potential and compacted to a minimum of 90 percent of the maximum dry density.

Expansive Soil Considerations

Preliminary laboratory test results indicate onsite earth materials exhibit an expansion potential of **VERY LOW** as classified in accordance with 2016 CBC Section 1803.5.3 and ASTM D4829-03. Additional, testing for expansive soil conditions should be conducted upon completion of rough grading. The following recommendations should be considered the very minimum requirements, for the earth materials tested. It is common practice for the project architect or structural engineer to require additional slab thickness, footing sizes, and/or reinforcement.

Very Low Expansion Potential (Expansion Index of 20 or Less)

Our laboratory test results indicate that the earth materials onsite exhibit a **VERY LOW** expansion potential as classified in accordance with 2016 CBC Section 1803.5.3 and ASTM D4829-03. Since the onsite earth materials exhibit expansion indices of 20 or less, the design of slab on ground foundations is exempt from the procedures outlined in Section 1808.6.1 or 1808.6.2.

Footings

- Exterior continuous footings may be founded at the minimum depths below the lowest adjacent final grade (i.e. 12-inch minimum depth for one-story, 18-inch minimum depth for two-story, and 24-inch minimum depth for three-story construction). Interior continuous footings for one-, two-, and three-story construction may be founded at a minimum depth of 12 inches below the lowest adjacent final grade. All continuous footings should have a minimum width of 12, 15, and 18 inches, for one-, two-, and three-story structures, respectively per Table 1809.7 of the 2016 CBC, and should be reinforced with a minimum of two (2) No. 4 bars, one (1) top and one (1) bottom.

- Exterior pad footings intended to support roof overhangs, such as second story decks, patio covers and similar construction should be a minimum of 24 inches square and founded at a minimum depth of 18 inches below the lowest adjacent final grade. No special reinforcement of the pad footings will be required.

Building Floor Slabs

- Building floor slabs should be a minimum of 4 inches thick and reinforced with a minimum of No. 3 bars spaced a maximum of 24 inches on center, each way. All floor slab reinforcement should be supported on concrete chairs or bricks to ensure the desired placement at mid-depth.

- Interior floor slabs, within living or moisture sensitive areas, should be underlain by a minimum 10-mil thick moisture/vapor barrier to help reduce the upward migration of moisture from the

underlying earth materials. The moisture/vapor barrier used should meet the performance standards of an ASTM E 1745 Class A material, and be properly installed in accordance with ACI publication 318-05. It is the responsibility of the contractor to ensure that the moisture/vapor barriers are free of openings, rips, or punctures prior to placing concrete. As an option for additional moisture reduction, higher strength concrete, such as a minimum 28-day compressive strength of 5,000 pounds per square inch (psi) may be used. Ultimately, the design of the moisture/vapor barrier system and recommendations for concrete placement and curing are the purview of the foundation engineer, taking into consideration the project requirements provided by the architect and owner.

- Garage floor slabs should be a minimum of 4 inches thick and should be reinforced in a similar manner as living area floor slabs. Garage floor slabs should be placed separately from adjacent wall footings with a positive separation maintained with ⅜ inch minimum felt expansion joint materials and quartered with weakened plane joints. A 12-inch-wide turn down founded at the same depth as adjacent footings should be provided across garage entrances. The turn down should be reinforced with a minimum of two (2) No. 4 bars, one (1) top and one (1) bottom.

- The subgrade earth materials below all floor slabs should be pre-watered to promote uniform curing of the concrete and minimize the development of shrinkage cracks, prior to placing concrete. The pre-watering should be verified by Earth Strata Geotechnical Services during construction.

Corrosivity

Corrosion is defined by the National Association of Corrosion Engineers (NACE) as "a deterioration of a substance or its properties because of a reaction with its environment." From a geotechnical viewpoint, the "substances" are the reinforced concrete foundations or buried metallic elements (not surrounded by concrete) and the "environment" is the prevailing earth materials in contact with them. Many factors can contribute to corrosivity, including the presence of chlorides, sulfates, salts, organic materials, different oxygen levels, poor drainage, different soil types, and moisture content. It is not considered practical or realistic to test for all of the factors which may contribute to corrosivity.

The potential for concrete exposure to chlorides is based upon the recognized Caltrans reference standard "Bridge Design Specifications", under Subsection 8.22.1 of that document, Caltrans has determined that "Corrosive water or soil contains more than 500 parts per million (ppm) of chlorides". Based on limited preliminary laboratory testing, the onsite earth materials have chloride contents *less* than 500 ppm. As such, specific requirements resulting from elevated chloride contents are not required.

Specific guidelines for concrete mix design are provided in 2016 CBC Section 1904.1 and ACI 318, Section 4.3 Table 4.3.1 when the soluble sulfate content of earth materials exceeds 0.1 percent by weight. Based on limited preliminary laboratory testing, the onsite earth materials are classified in accordance with Table 4.3.1 as having a *negligible* sulfate exposure condition. Therefore, structural concrete in contact with onsite earth materials should utilize Type I or II.

Based on our laboratory testing of resistivity, the onsite earth materials in contact with buried steel should be considered *mildly corrosive*. Additionally, pH values below 9.7 are recognized as being corrosive to most common metallic components including, copper, steel, iron, and aluminum. The pH values for the earth

materials tested were *lower* than 9.7. Therefore, any steel or metallic materials that are exposed to the earth materials should be encased in concrete or other measures should be taken to provide corrosion protection.

The preliminary test results for corrosivity are based on limited samples, and the initiation of grading may blend various earth materials together. This blending or imported material could alter and increase the detrimental properties of the onsite earth materials. Accordingly, additional testing for chlorides and sulfates along with testing for pH and resistivity should be performed upon completion of grading. Laboratory test results are presented in Appendix C.

RETAINING WALLS

Active and At-Rest Earth Pressures

Foundations may be designed in accordance with the recommendations provided in the Tentative Foundation Design Recommendation section of this report. The following table provides the minimum recommended equivalent fluid pressures for design of retaining walls a maximum of 8 feet high. The active earth pressure should be used for design of unrestrained retaining walls, which are free to tilt slightly. The at-rest earth pressure should be used for design of retaining walls that are restrained at the top, such as basement walls, curved walls with no joints, or walls restrained at corners. For curved walls, active pressure may be used if tilting is acceptable and construction joints are provided at each angle point and at a minimum of 15 foot intervals along the curved segments.

MINIMUM STATIC EQUIVALENT FLUID PRESSURES (pcf)		
PRESSURE TYPE	BACKSLOPE CONDITION	
	LEVEL	2:1 (h:v)
Active Earth Pressure	40	63
At-Rest Earth Pressure	60	95

The retaining wall parameters provided do not account for hydrostatic pressure behind the retaining walls. Therefore, the subdrain system is a very important part of the design. All retaining walls should be designed to resist surcharge loads imposed by other nearby walls, structures, or vehicles should be added to the above earth pressures, if the additional loads are being applied within a 1.5:1 (h:v) plane projected up from the heel of the retaining wall footing. As a way of minimizing surcharge loads and the settlement potential of nearby buildings, the footings for the building can be deepened below the 1.5:1 (h:v)plane projected up from the heel of the retaining wall footing.

Upon request and under a separate scope of work, more detailed analyses can be performed to address equivalent fluid pressures with regard to stepped retaining walls, actual retaining wall heights, actual backfill inclinations, specific backfill materials, higher retaining walls requiring earthquake design motions, etc.

Subdrain System

We recommend a perforated pipe and gravel subdrain system be provided behind all proposed retaining walls to prevent the buildup of hydrostatic pressure behind the proposed retaining walls. The perforated pipe should consist of 4-inch minimum diameter Schedule 40 PVC or ABS SDR-35, placed with the perforations facing down. The pipe should be surrounded by 1 cubic foot per foot of ¾- or 1½ inch open graded gravel wrapped in filter fabric. The filter fabric should consist of Mirafi 140N or equivalent to prevent infiltration of fines and subsequent clogging of the subdrain system.

In lieu of a perforated pipe and gravel subdrain system, weep holes or open vertical masonry joints may be provided in the lowest row of block exposed to the air to prevent the buildup of hydrostatic pressure behind the proposed retaining walls. Weep holes should be a minimum of 3 inches in diameter and provided at intervals of at least every 6 feet along the wall. Open vertical masonry joints should be provided at a minimum of 32 inch intervals. A continuous gravel fill, a minimum of 1 cubic foot per foot, should be placed behind the weep holes or open masonry joints. The gravel should be wrapped in filter fabric consisting of Mirafi 140N or equivalent.

The retaining walls should be adequately coated on the backfilled side of the walls with a proven waterproofing compound by an experienced professional to inhibit infiltration of moisture through the walls.

Temporary Excavations

All excavations should be made in accordance with Cal-OSHA requirements. Earth Strata Geotechnical Services is not responsible for job site safety.

Retaining Wall Backfill

Retaining wall backfill materials should be approved by the geotechnical engineer or his representative prior to placement as compacted fill. Retaining wall backfill should be placed in lifts no greater than 6 to 8 inches, watered or air dried as necessary to achieve near optimum moisture contents. All retaining wall backfill should be compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM D 1557. Retaining wall backfill should be capped with a paved surface drain.

CONCRETE FLATWORK

Thickness and Joint Spacing

Concrete sidewalks and patio type slabs should be at least 3½ inches thick and provided with construction or expansion joints every 6 feet or less, to reduce the potential for excessive cracking. Concrete driveway slabs should be at least 4 inches thick and provided with construction or expansion joints every 10 feet or less.

Subgrade Preparation

In order to reduce the potential for unsightly cracking, subgrade earth materials underlying concrete flatwork should be compacted at near optimum moisture to 90 percent of the maximum dry density determined by ASTM D 1557 and then moistened to optimum or slightly above optimum moisture content.

This moisture should extend to a depth of 12 inches below subgrade and be maintained prior to placement of concrete. Pre-watering of the earth materials prior to placing concrete will promote uniform curing of the concrete and minimize the development of shrinkage cracks. The project geotechnical engineer or his representative should verify the density and moisture content of the earth materials and the depth of moisture penetration prior to placing concrete.

Cracking within concrete flatwork is often a result of factors such as the use of too high a water to cement ratio and/or inadequate steps taken to prevent moisture loss during the curing of the concrete. Concrete distress can be reduced by proper concrete mix design and proper placement and curing of the concrete. Minor cracking within concrete flatwork is normal and should be expected.

PRELIMINARY ASPHALTIC CONCRETE PAVEMENT DESIGN

Laboratory testing of representative earth materials indicate an R-value of 16 may be used for preliminary pavement design. The following table includes our minimum recommended asphaltic concrete pavement sections calculated in accordance with the State of California design procedures using assumed Traffic Indices. Final pavement design should be based on sampling and testing of post grading conditions. Alternative pavement sections and calculation sheets have been provided within the appendices of this report.

PRELIMINARY ASPHALTIC CONCRETE PAVEMENT DESIGN			
PARAMETERS	**AUTO PARKING**	**AUTO DRIVES**	**ENTRANCES**
Assumed Traffic Index	5.0	6.0	7.0
Design R-Value	16	16	16
AC Thickness (inches)	3	4	4½
AB Thickness (inches)	8	9	12

Notes: AC – Asphaltic Concrete
AB – Aggregate Base

The subgrade earth materials immediately below the aggregate base (base) should be compacted to a minimum of 95 percent of the maximum dry density determined by ASTM D 1557 to a minimum depth of 12 inches. Base materials should be compacted to a minimum of 95 percent of the maximum dry density determined by ASTM D 1557.

Base materials should consist of Class 2 aggregate base conforming to Section 26-1.02B of the State of California Standard Specifications or crushed aggregate base conforming to Section 200-2 of the Standard Specifications for Public Works Construction (Greenbook). Base materials should be compacted at or slightly below optimum moisture content. Asphaltic concrete materials and construction operations should conform to Section 203 of the Greenbook.

GRADING PLAN REVIEW AND CONSTRUCTION SERVICES

This report has been prepared for the exclusive use of **Mr. Mark Cooper** and their authorized representative. It likely does not contain sufficient information for other parties or other uses. Earth Strata

Geotechnical Services should be engaged to review the final design plans and specifications prior to construction. This is to verify that the recommendations contained in this report have been properly incorporated into the project plans and specifications. Should Earth Strata Geotechnical Services not be accorded the opportunity to review the project plans and specifications, we are not responsibility for misinterpretation of our recommendations.

We recommend that Earth Strata Geotechnical Services be retained to provide geologic and geotechnical engineering services during grading and foundation excavation phases of the work. In order to allow for design changes in the event that the subsurface conditions differ from those anticipated prior to construction.

Earth Strata Geotechnical Services should review any changes in the project and modify and approve in writing the conclusions and recommendations of this report. This report and the drawings contained within are intended for design input purposes only and are not intended to act as construction drawings or specifications. In the event that conditions encountered during grading or construction operations appear to be different than those indicated in this report, this office should be notified immediately, as revisions may be required.

REPORT LIMITATIONS

Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists, practicing at the time and location this report was prepared. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

Earth materials vary in type, strength, and other geotechnical properties between points of observation and exploration. Groundwater and moisture conditions can also vary due to natural processes or the works of man on this or adjacent properties. As a result, we do not and cannot have complete knowledge of the subsurface conditions beneath the subject property. No practical study can completely eliminate uncertainty with regard to the anticipated geotechnical conditions in connection with a subject property. The conclusions and recommendations within this report are based upon the findings at the points of observation and are subject to confirmation by Earth Strata Geotechnical Services based on the conditions revealed during grading and construction.

This report was prepared with the understanding that it is the responsibility of the owner or their representative, to ensure that the conclusions and recommendations contained herein are brought to the attention of the other project consultants and are incorporated into the plans and specifications. The owners' contractor should properly implement the conclusions and recommendations during grading and construction, and notify the owner if they consider any of the recommendations presented herein to be unsafe or unsuitable.

APPENDIX A

REFERENCES

APPENDIX A

References

California Building Standards Commission, 2016, *2016 California Building Code, California Code of Regulations Title 24, Part 2, Volume 2 of 2,* Based on 2012 International Building Code.

DeLorme, 2004, (www.delorme.com) *Topo USA*®.

Hart, Earl W. and Bryant, William A., *1997, Fault Rupture Hazard Zones in California, CDMG Special Publication 42,* revised 2003.

Irvine Geotechnical, 2001, Mult Calc 2000, October 10.

Morton, D.M. (compiler), and Fred K. Miller (compiler), 2006, *Geologic Map of the San Bernardino and Santa Ana 30' x 60' Quadrangles, California*: U.S. Geological Survey, Version 1, California.

National Association of Corrosion Engineers, 1984, *Corrosion Basics An Introduction*, page 191.

Southern California Earthquake Center (SCEC), 1999, *Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California,* March.

APPENDIX B

EXPLORATORY LOGS

Geotechnical Boring Log B-1

Date: August 30, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 2**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0		0-5'				**Artificial Fill, Undocumented (Afu):**
					SM	Silty SAND; dark yellowish brown, moist, medium dense, fine to coarse sand
	28	2.5'	113.8	6.7		with clay and trace gravel
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, dry, dense, fine to coarse sand with clay
5	34	5'	116.8	6.0		
	23	7.5'	113.2	4.7		Dark yellowish brown, slightly moist, medium dense
10	32	10'	116.0	9.0		
15	26	15'	118.8	13.1		
20	31	20'	123.7	10.9	ML	Sandy SILT; olive brown, moist, stiff, fine to coarse sand
25	33	25'	99.6	25.9	CL	CLAY; light olive gray, moist, very stiff, fine sand
30						

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Geotechnical Boring Log B-1

Date: August 30, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 2 of 2**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
30	27	30'	91.9	29.8		Olive gray, moist, very stiff, fine to medium sand
40	28	40'	102.2	26.4		
45	58	45'	98.6	7.9	ML	Sandy SILT; light olive gray, dry, very stiff, fine to medium sand
						Total Depth: 46.5 feet
						No Groundwater
50						
55						
60						

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Geotechnical Boring Log B-2

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Fill, Undocumented (Afu):**
					SC	Clayey SAND; dark yellowish brown, dry, dense, fine to coarse sand with trace
	20	2.5'	115.8	8.8		gravel
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; dark yellowish brown, moist, medium dense, fine to coarse sand with
5	15	5'	103.7	15.2		clay
	22	7.5'	114.7	13.7	SC	Clayey SAND; dark yellowish brown, moist, medium dense, fine to coarse sand
10	33	10'	122.7	11.2		Yellowish brown
15	30	15'	118.4	8.6		
					ML	Sandy SILT; light olive gray to olive brown, moist, stiff, fine to medium sand
20	33	20'	126.9	10.8		
						Total Depth: 21.5 feet
						No Groundwater
25						
30						

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Geotechnical Boring Log B-3

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Fill, Undocumented (Afu):**
					SC	Clayey SAND; dark yellowish brown, slightly moist, very dense, fine to coarse
	72	2.5'	124.1	4.1		sand with trace gravel
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, dry, very dense, fine to coarse sand with clay and
5	23	5'	115.6	11.7		trace gravel
	19	7.5'	113.6	12.2		Dark yellowish brown
10	20	10'	107.0	10.2		
15	22	15'	116.3	11.0		
					CL	Sandy CLAY; olive gray, moist, stiff, fine sand
20	24	20'	95.6	25.1		
25						
30						

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Geotechnical Boring Log B-4

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Fill, Undocumented (Afu):**
					SM	Silty SAND; yellowish brown, slightly moist, medium dense, fine to coarse
	23	2.5'	103.9	5.6		sand with trace clay
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, dry, medium dense, fine to coarse sand
5	28	5'	113.0	2.7		
	24	7.5'	111.3	8.0	SC	Clayey SAND; yellowish brown, slightly moist, medium dense, fine to coarse sand
10	19	10'	113.8	11.4	SM	Silty SAND; yellowish brown, slightly moist, medium dense, fine to coarse sand
						with clay
15	28	15'	118.1	8.9		
20	26	20'	115.1	16.7		Fine to medium sand
						Total Depth: 21.5 feet
						No Groundwater
25						
30						

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Geotechnical Boring Log B-5

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Fill, Undocumented (Afu):**
					SM	Silty SAND; dark yellowish brown, slightly moist, medium dense, fine to coarse
	32	2.5'	126.5	6.2		sand
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, slightly moist, medium dense, fine to coarse sand
5	16	5'	101.4	8.3		with clay
	19	7.5'	109.4	13.3		
10	23	10'	107.7	11.9		
15	16	15'	115.5	13.1	SC	Clayey SAND; yellow brown, slightly moist, medium dense, fine to coarse sand
20	33	20'	118.6	12.8		Olive brown, moist, dense, fine to coarse sand
						Total Depth: 21.5 feet
						No Groundwater
25						
30						

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Geotechnical Boring Log B-6

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Filll, Undocumented (Afu):**
					SC	Clayey SAND; dark yellowish brown, moist, medium dense, fine to coarse sand
	13	2.5'	112.4	8.8		
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; dark yellowish brown, dry, medium dense, fine to coarse sand
5	11	5'	104.8	4.1		with trace clay
	17	7.5'	115.1	8.4		
10	30	10'	119.1	9.6		
15	26	15'	114.4	12.8	ML	Sandy SILT; yellowish brown, slightly moist, very stiff, fine sand
20	33	20'	110.2	13.7		
						Total Depth: 21.5 feet
						No Groundwater
25						
30						

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Geotechnical Boring Log B-7

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0		0-5'				**Artificial Fill, Undocumented (Afu):**
					SM	Silty SAND; yellowish brown, slightly moist, medium dense, fine to coarse
	26	2.5'	110.9	8.8		sand
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, slightly moist, medium dense, fine to coarse
5	22	5'	112.1	7.0		with clay
	36	7.5'	113.2	3.6		
10	21	10'	120.7	12.8		
15	28	15'	110.8	18.4	SC	Clayey SAND; yellowish brown, slightly moist, medium dense, fine to coarse sand
20	23	20'	90.3	28.2	CL	CLAY; light grayish brown, moist, stiff
						Total Depth: 21.5 feet
						No Groundwater
25						
30						

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Geotechnical Boring Log B-8

Date: September 6, 2019	**Project Name: Mission Trail Road & Corydon Road, Lake Elsinore** **Page: 1 of 1**
Project Number: 192846-10A	**Logged By: JF**
Drilling Company: Drilling It	**Type of Rig: B-61**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft): See Map	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Depth	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Artificial Fill, Undocumented (Afu):**
					SC	Clayey SAND; yellowish brown, dry, medium dense, fine to coarse sand
	19	2.5'	118.9	8.1		
						Quaternary Young Alluvial Valley Deposits (Qyv):
					SM	Silty SAND; yellowish brown, slightly moist, dry, medium dense, fine to coarse sand
5	16	5'	121.0	8.7		with trace clay
	18	7.5'	99.5	7.0		
10	44	10'	125.3	8.3		
15	32	15'	109.9	13.1		
						Total Depth: 16.5 feet
						No Groundwater
20						
25						
30						

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APPENDIX C

LABORATORY PROCEDURES AND TEST RESULTS

APPENDIX C

Laboratory Procedures and Test Results

Laboratory testing provided quantitative and qualitative data involving the relevant engineering properties of the representative earth materials selected for testing. The representative samples were tested in general accordance with American Society for Testing and Materials (ASTM) procedures and/or California Test Methods (CTM).

Soil Classification: Earth materials encountered during exploration were classified and logged in general accordance with the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) of ASTM D 2488. Upon completion of laboratory testing, exploratory logs and sample descriptions were reconciled to reflect laboratory test results with regard to ASTM D 2487.

Grain Size Distribution: Select samples were tested using the guidelines of ASTM D 1140. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	% PASSING # 200 SIEVE
B-1 @ 7.5 feet	Silty SAND	22
B-1 @ 15 feet	Sandy CLAY	52
B-1 @ 20 feet	Sandy CLAY	51
B-1 @ 30 feet	CLAY	96
B-1 @ 40 feet	CLAY	91
B-1 @ 45 feet	Silty SAND	42

Moisture and Density Tests: For select samples moisture content was determined using the guidelines of ASTM D 2216 and dry density determinations were made using the guidelines of ASTM D 2937. These tests were performed on relatively undisturbed samples and the test results are presented on the exploratory logs.

Maximum Density Tests: The maximum dry density and optimum moisture content of representative samples were determined using the guidelines of ASTM D 1557. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	MAXIMUM DRY DENSITY (pcf)	OPTIMUM MOISTURE CONTENT (%)
Bulk 1 @ 0 – 5 feet	Silty SAND	128.0	6.5

Expansion Index: The expansion potential of representative samples was evaluated using the guidelines of ASTM D 4829. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	EXPANSION INDEX	EXPANSION POTENTIAL
Bulk 1 @ 0 – 5 feet	Silty SAND	3	Very Low

R-Value: The R-value of representative samples was determined using the guidelines of CTM 301. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	R-VALUE
Bulk 1 @ 0 – 5 feet	Silty SAND	16

Minimum Resistivity and pH Tests: Minimum resistivity and pH Tests of select samples were performed using the guidelines of CTM 643. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	pH	MINIMUM RESISTIVITY (ohm-cm)
Bulk 1 @ 0 – 5 feet	Silty SAND	7.2	3,600

Soluble Sulfate: The soluble sulfate content of select samples was determined using the guidelines of CTM 417. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	SULFATE CONTENT (% by weight)	SULFATE EXPOSURE
Bulk 1 @ 0 – 5 feet	Silty SAND	0.002	Negligible

Chloride Content: Chloride content of select samples was determined using the guidelines of CTM 422. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	CHLORIDE CONTENT (ppm)
Bulk 1 @ 0 – 5 feet	Silty SAND	30

APPENDIX D

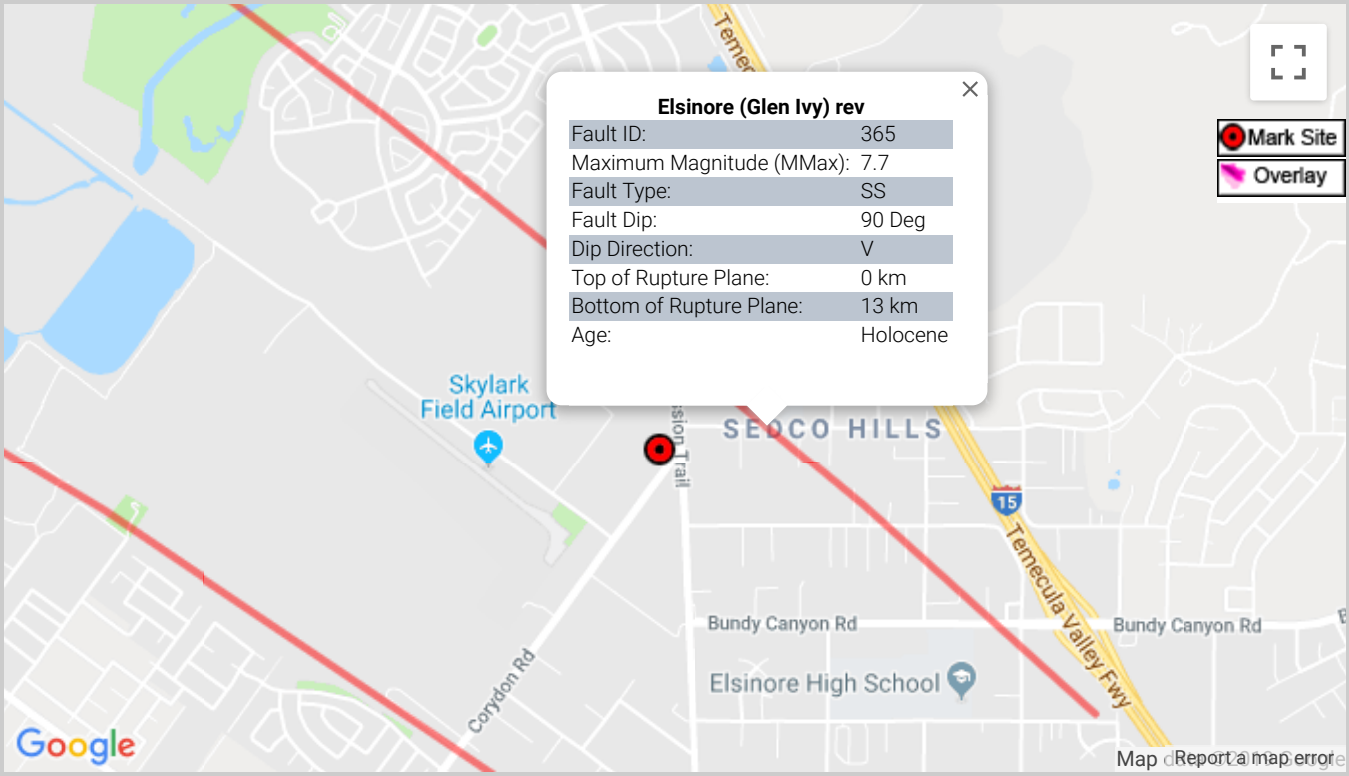
SEISMICITY

CALIFORNIA DEPARTMENT OF TRANSPORTATION

Caltrans ARS Online (v2.3.09)

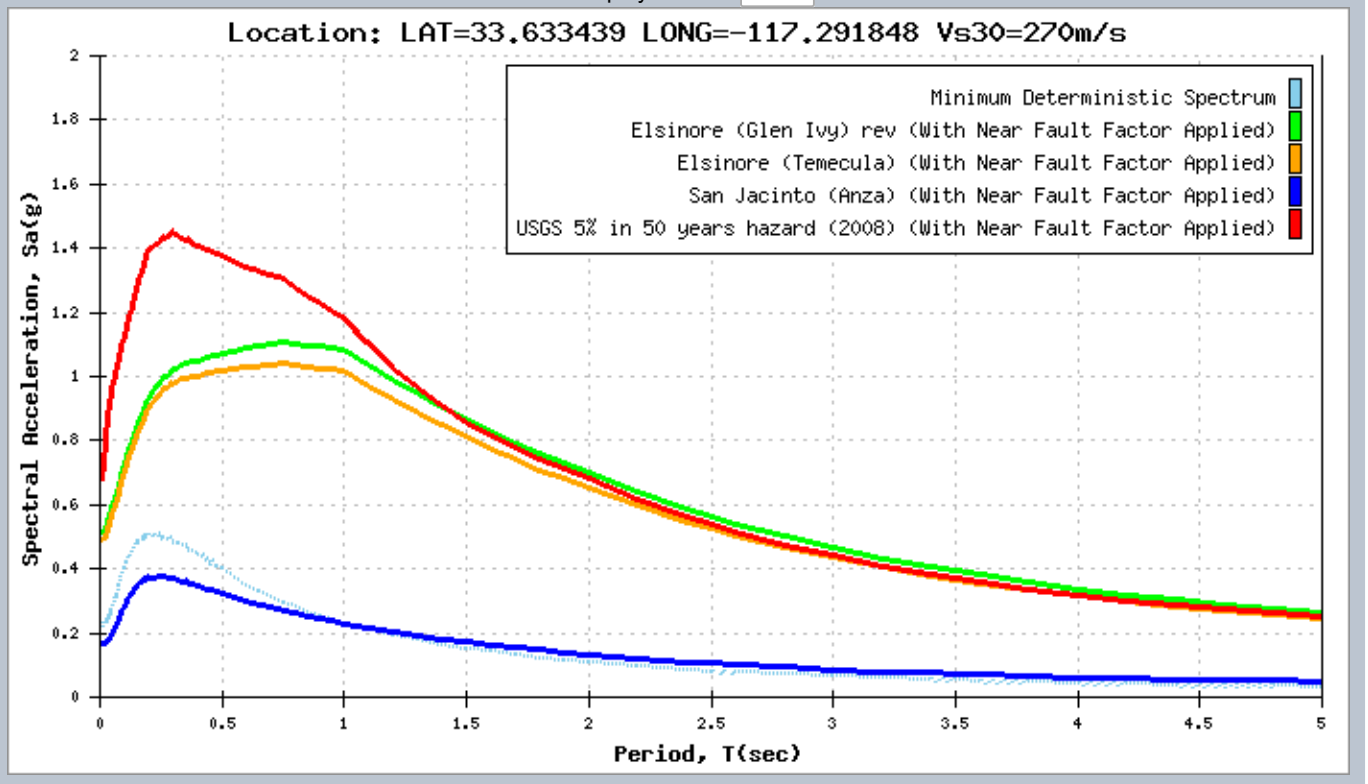
This web-based tool calculates both deterministic and probabilistic acceleration response spectra for any location in California based on criteria provided in *Appendix B of Caltrans Seismic Design Criteria*. More...

SELECT SITE LOCATION



Latitude: 33.633439 **Longitude:** -117.291848 ***Vs30*:** 270 m/s Calculate

CALCULATED SPECTRA Display Curves: 3



Tabular Data | Envelope Only | Hide Near Fault | Axis Scale | Show Basin

Apply Near Fault Adjustment To:
NOTE: Caltrans SDC requires application of a Near Fault Adjustment factor for sites less than 25 km (Rrup) from the causative fault.

- [x] Deterministic Spectrum Using
  - 0.38 Km Elsinore (Glen Ivy) rev
  - 1.49 Km Elsinore (Temecula)
  - 31.57 Km San Jacinto (Anza)
- [x] Probabilistic Spectrum Using
  - 0.38 Km (Recommend Performing Deaggregation To Verify)

- (•) Show Spectrum with Adjustment Only
- ( ) Show Spectrum with and without near fault Adjustment

OK

U.S. Geological Survey - Earthquake Hazards Program

2008 National Seismic Hazard Maps - Source Parameters

New Search

Distance in Kilometers	Name	State	Pref Slip Rate (mm/yr)	Dip (degrees)	Dip Dir	Slip Sense	Rupture Top (km)	Rupture Bottom (km)	Length (km)
0.27	Elsinore;GI	CA	5	90	V	strike slip	0	13	37
0.27	Elsinore;W+GI	CA	n/a	81	NE	strike slip	0	14	83
1.10	Elsinore;W+GI+T+J	CA	n/a	84	NE	strike slip	0	16	199
1.10	Elsinore;W+GI+T	CA	n/a	84	NE	strike slip	0	14	124
1.10	Elsinore;GI+T+J	CA	n/a	86	NE	strike slip	0	17	153
1.10	Elsinore;W+GI+T+J+CM	CA	n/a	84	NE	strike slip	0	16	241
1.10	Elsinore;GI+T+J+CM	CA	n/a	86	NE	strike slip	0	16	195
1.10	Elsinore;GI+T	CA	5	90	V	strike slip	0	14	78
1.49	Elsinore;T+J+CM	CA	n/a	85	NE	strike slip	0	16	169
1.49	Elsinore;T+J	CA	n/a	86	NE	strike slip	0	17	127
1.49	Elsinore;T	CA	5	90	V	strike slip	0	14	52
31.97	San Jacinto;A+CC	CA	n/a	90	V	strike slip	0	16	118
31.97	San Jacinto;A+C	CA	n/a	90	V	strike slip	0	17	118
31.97	San Jacinto;A+CC+B	CA	n/a	90	V	strike slip	0.1	15	152
31.97	San Jacinto;A+CC+B+SM	CA	n/a	90	V	strike slip	0.1	15	178
31.97	San Jacinto;A	CA	9	90	V	strike slip	0	17	71
33.11	Chino, alt 2	CA	1	65	SW	strike slip	0	14	29
33.83	San Jacinto;SJV+A+CC	CA	n/a	90	V	strike	0	16	136

						slip			
33.83	San Jacinto;SJV+A	CA	n/a	90	V	strike slip	0	17	89
33.83	San Jacinto;SJV+A+CC+B+SM	CA	n/a	90	V	strike slip	0.1	15	196
33.83	San Jacinto;SBV+SJV+A+C	CA	n/a	90	V	strike slip	0	17	181
33.83	San Jacinto;SBV+SJV+A	CA	n/a	90	V	strike slip	0	16	134
33.83	San Jacinto;SJV+A+CC+B	CA	n/a	90	V	strike slip	0.1	15	170
33.83	San Jacinto;SBV+SJV+A+CC	CA	n/a	90	V	strike slip	0	16	181
33.83	San Jacinto;SBV+SJV+A+CC+B	CA	n/a	90	V	strike slip	0.1	15	215
33.83	San Jacinto;SBV+SJV+A+CC+B+SM	CA	n/a	90	V	strike slip	0.1	15	241
33.83	San Jacinto;SJV+A+C	CA	n/a	90	V	strike slip	0	17	136
34.99	San Jacinto;SBV+SJV	CA	n/a	90	V	strike slip	0	16	88
34.99	San Jacinto;SJV	CA	18	90	V	strike slip	0	16	43
35.19	Elsinore;W	CA	2.5	75	NE	strike slip	0	14	46
35.77	San Joaquin Hills	CA	0.5	23	SW	thrust	2	13	27
37.30	Chino, alt 1	CA	1	50	SW	strike slip	0	9	24
41.75	Elsinore;J	CA	3	84	NE	strike slip	0	19	75
41.75	Elsinore;J+CM	CA	3	84	NE	strike slip	0	17	118
42.85	San Jacinto;SBV	CA	6	90	V	strike slip	0	16	45
44.84	Newport Inglewood Connected alt 2	CA	1.3	90	V	strike slip	0	11	208
44.84	Newport Inglewood Connected alt 1	CA	1.3	89		strike slip	0	11	208
44.84	Newport-Inglewood (Offshore)	CA	1.5	90	V	strike slip	0	10	66
54.99	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14	384
54.99	S. San	CA	n/a	86		strike	0.1	13	512

	Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG+CO					slip			
54.99	S. San Andreas;SSB+BG	CA	n/a	71		strike slip	0	13	101
54.99	S. San Andreas;NSB+SSB+BG+CO	CA	n/a	79		strike slip	0.2	12	206
54.99	S. San Andreas;CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14	322
54.99	S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	85		strike slip	0	14	380
54.99	S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13	449
54.99	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	86		strike slip	0	14	442
54.99	S. San Andreas;NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	13	213
54.99	S. San Andreas;NM+SM+NSB+SSB+BG	CA	n/a	83		strike slip	0	14	271
54.99	S. San Andreas;NM+SM+NSB+SSB+BG+CO	CA	n/a	84		strike slip	0.1	13	340
54.99	S. San Andreas;NSB+SSB	CA	n/a	90	V	strike slip	0	13	79
54.99	S. San Andreas;NSB+SSB+BG	CA	n/a	75		strike slip	0	14	136
54.99	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0.1	13	421
54.99	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	86		strike slip	0.1	13	479
54.99	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13	548
54.99	S. San Andreas;SM+NSB+SSB	CA	n/a	90	V	strike slip	0	13	176
54.99	S. San Andreas;SM+NSB+SSB+BG	CA	n/a	81		strike slip	0	13	234
54.99	S. San Andreas;SM+NSB+SSB+BG+CO	CA	n/a	83		strike slip	0.1	13	303
54.99	S. San Andreas;SSB	CA	16	90	V	strike slip	0	13	43
54.99	S. San Andreas;SSB+BG+CO	CA	n/a	77		strike slip	0.2	12	170
54.99	S. San Andreas;BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14	263
54.99	S. San Andreas;BB+NM+SM+NSB+SSB+BG	CA	n/a	84		strike slip	0	14	321

54.99	S. San Andreas;BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	85		strike slip	0.1	13	390
57.57	S. San Andreas;BG+CO	CA	n/a	72		strike slip	0.3	12	125
57.57	S. San Andreas;BG	CA	n/a	58		strike slip	0	13	56
57.66	S. San Andreas;NM+SM+NSB	CA	n/a	90	V	strike slip	0	13	170
57.66	S. San Andreas;BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14	220
57.66	S. San Andreas;CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14	279
57.66	S. San Andreas;NSB	CA	22	90	V	strike slip	0	13	35
57.66	S. San Andreas;SM+NSB	CA	n/a	90	V	strike slip	0	13	133
57.66	S. San Andreas;CH+CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14	341
57.66	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0.1	13	377
57.97	Rose Canyon	CA	1.5	90	V	strike slip	0	8	70
59.70	Newport-Inglewood, alt 1	CA	1	88		strike slip	0	15	65
60.91	Puente Hills (Coyote Hills)	CA	0.7	26	N	thrust	2.8	15	17
61.65	Cucamonga	CA	5	45	N	thrust	0	8	28
64.50	San Jose	CA	0.5	74	NW	strike slip	0	15	20
68.38	Sierra Madre	CA	2	53	N	reverse	0	14	57
68.38	Sierra Madre Connected	CA	2	51		reverse	0	14	76
69.48	Palos Verdes Connected	CA	3	90	V	strike slip	0	10	285
69.48	Coronado Bank	CA	3	90	V	strike slip	0	9	186
69.95	Palos Verdes	CA	3	90	V	strike slip	0	14	99
70.53	Pinto Mtn	CA	2.5	90	V	strike slip	0	16	74
71.17	Cleghorn	CA	3	90	V	strike slip	0	16	25
71.82	San Jacinto;CC	CA	4	90	V	strike slip	0	16	43

71.82	San Jacinto;CC+B	CA	n/a	90	V	strike slip	0.2	14	77
71.82	San Jacinto;CC+B+SM	CA	n/a	90	V	strike slip	0.2	14	103
73.95	San Jacinto;C	CA	14	90	V	strike slip	0	17	47
74.98	Puente Hills (Santa Fe Springs)	CA	0.7	29	N	thrust	2.8	15	11
75.86	North Frontal (West)	CA	1	49	S	reverse	0	16	50
79.41	S. San Andreas;NM+SM	CA	n/a	90	V	strike slip	0	14	134
79.41	S. San Andreas;BB+NM+SM	CA	n/a	90	V	strike slip	0	14	184
79.41	S. San Andreas;CH+CC+BB+NM+SM	CA	n/a	90	V	strike slip	0	14	306
79.41	S. San Andreas;PK+CH+CC+BB+NM+SM	CA	n/a	90	V	strike slip	0.1	13	342
79.41	S. San Andreas;SM	CA	29	90	V	strike slip	0	13	98
79.41	S. San Andreas;CC+BB+NM+SM	CA	n/a	90	V	strike slip	0	14	243
82.62	Earthquake Valley	CA	2	90	V	strike slip	0	19	20
84.63	Clamshell-Sawpit	CA	0.5	50	NW	reverse	0	14	16
85.81	Puente Hills (LA)	CA	0.7	27	N	thrust	2.1	15	22
87.36	Raymond	CA	1.5	79	N	strike slip	0	16	22
88.41	Helendale-So Lockhart	CA	0.6	90	V	strike slip	0	13	114
89.06	Elysian Park (Upper)	CA	1.3	50	NE	reverse	3	15	20
89.85	Burnt Mtn	CA	0.6	67	W	strike slip	0	16	21
90.27	North Frontal (East)	CA	0.5	41	S	thrust	0	16	27
95.08	Eureka Peak	CA	0.6	90	V	strike slip	0	15	19
97.04	Verdugo	CA	0.5	55	NE	reverse	0	15	29
98.35	S. San Andreas;CO	CA	20	90	V	strike slip	0.6	11	69
99.50	Lenwood-Lockhart-Old Woman Springs	CA	0.9	90	V	strike slip	0	13	145
99.97	Landers	CA	0.6	90	V	strike slip	0	15	95

USGS

Search Results

0 of 0 earthquakes in map area.

Click for more information

There are no events in the current feed.

Didn't find what you were looking for?

- Check your Settings.
- Which earthquakes are included on the map and list?
- Felt something not shown – report it here.

Earthquakes updated

Hazards by Location

Search Information

Coordinates: 33.633439, -117.291848

Elevation: ft

Timestamp: 2019-08-30T19:38:28.623Z

Hazard Type: Seismic

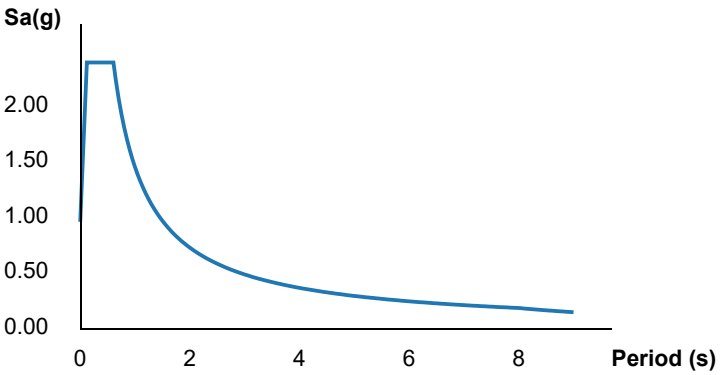
Reference Document: ASCE7-10

Risk Category: II

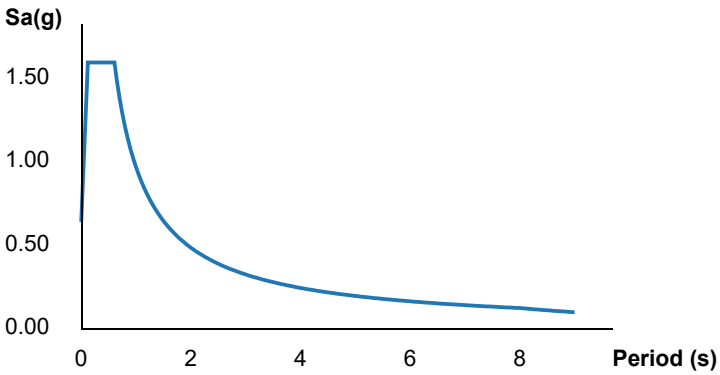
Site Class: D



MCER Horizontal Response Spectrum



Design Horizontal Response Spectrum



Basic Parameters

Name	Value	Description
S_S	2.389	MCE_R ground motion (period=0.2s)
S_1	0.965	MCE_R ground motion (period=1.0s)
S_{MS}	2.389	Site-modified spectral acceleration value
S_{M1}	1.447	Site-modified spectral acceleration value
S_{DS}	1.593	Numeric seismic design value at 0.2s SA
S_{D1}	0.965	Numeric seismic design value at 1.0s SA

Additional Information

Name	Value	Description
SDC	E	Seismic design category
F_a	1	Site amplification factor at 0.2s
F_v	1.5	Site amplification factor at 1.0s
CR_S	0.904	Coefficient of risk (0.2s)

CR_1	0.891	Coefficient of risk (1.0s)
PGA	0.958	MCE_G peak ground acceleration
F_{PGA}	1	Site amplification factor at PGA
PGA_M	0.958	Site modified peak ground acceleration
T_L	8	Long-period transition period (s)
SsRT	2.389	Probabilistic risk-targeted ground motion (0.2s)
SsUH	2.643	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	2.587	Factored deterministic acceleration value (0.2s)
S1RT	0.965	Probabilistic risk-targeted ground motion (1.0s)
S1UH	1.083	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	1.174	Factored deterministic acceleration value (1.0s)
PGAd	0.998	Factored deterministic acceleration value (PGA)

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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APPENDIX E

LIQUEFACTION ANALYSIS

LIQUEFACTION & SETTLEMENT OF SANDS ANALYSIS

Project Name: CORYDON RD/ MISSION TRAIL
Project Number: 192846-10A
Boring Number: B-1 (INSITU)

Horizontal Ground Acceleration (% g)	0.958	Energy Ratio C_E (Auto-hammer)	1.70
Analyzed Groundwater Depth (feet)	5.0	Borehole Diameter C_B (6 - 8 inches)	1.00
Average Wet Unit Weight (pcf)	124.2	Groundwater Depth in Boring (feet)	362.0
Design Magnitude Earthquake	7.7		
Magnitude Scaling Factor (MSF)	0.9		

Depth (feet)	Blow Count SPT	Blow Count Cal. Mod.	SPT N_m	Total Stress (tons/ft2)	Effective Stress (tons/ft2)	Fines Content FC(%)	C_R	Overburden C_N	rd	Sampler Type C_S	$(N_1)_{60}$	$(N_1)_{60cs}$	NCEER 1998 CSR	NCEER 1998 CRR*MSF	Liquefaction Safety Factor	Layer Thickness t (ft)	Layer Thickness t (inches)	Percent Volumetric Strain	Settlement Per Sand Layer (inches)
4		34	25.704	0.248	0.248	22	0.75	1.52	0.99	1.00	50	58	0.62	---	Corrected SPT >30*	4.00	48.00	0.00	0.00
7		23	17.388	0.435	0.372	22	0.75	1.35	0.98	1.00	30	37	0.72	---	Corrected SPT >30*	3.00	36.00	0.00	0.00
9		32	24.192	0.559	0.434	22	0.75	1.25	0.98	1.00	39	46	0.78	---	Corrected SPT >30*	2.00	24.00	0.00	0.00
13		26	19.656	0.807	0.558	52	0.85	1.10	0.97	1.00	31	42	0.87	---	Corrected SPT >30*	4.00	48.00	0.00	Fine Grained
18		31	23.436	1.118	0.712	51	0.95	0.95	0.96	1.00	36	48	0.94	---	Corrected SPT >30*	5.00	60.00	0.00	Fine Grained
23		33	24.948	1.428	0.867	51	0.95	0.84	0.95	1.00	34	45	0.97	---	Corrected SPT >30*	5.00	60.00	0.00	Fine Grained
28		27	20.412	1.739	1.021	96	0.95	0.75	0.93	1.00	25	35	0.99	---	Corrected SPT >30*	5.00	60.00	0.00	Fine Grained
33		27	20.412	2.049	1.176	96	1.00	0.68	0.91	1.00	23	33	0.98	---	Corrected SPT >30*	5.00	60.00	0.00	Fine Grained
40		28	21.168	2.484	1.392	91	1.00	0.60	0.85	1.00	21	31	0.94	0.4998	Corrected SPT >30*	7.00	84.00	0.00	Fine Grained
44		58	43.848	2.732	1.516	42	1.00	0.56	0.82	1.00	42	55	0.92	---	Corrected SPT >30*	4.00	48.00	0.00	0.00

Total Settlement (inches): 0.0

Procedure established by T.L. Youd and I.M. Idriss, et. al., 1996 NCEER-96-0022 Workshop & S.C.E.C. SP117
Evaluation of settlements in sand due to earthquake shaking, Tokimatsu and Seed, 1987

3 Extension of rod above boring (feet)

* CRR 7.5 is not defined for $(N_1)60cs$ greater than 30. Soils with (N1)60cs > 30 are considered too dense to liquefy (NCEER Workshop)

$(N_1)_{60} = N_M C_N C_E C_B C_R C_S$ $(N_1)_{60CS} = K_S (N_1)_{60}$

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APPENDIX F

ASPHALTIC CONCRETE PAVEMENT CALCULATIONS

PAVING DESIGN

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JN: **192846-10A** CONSULT: **SMP**
PROJECT: **Corydon Road and Mission Trail Road**

CALCULATION SHEET # **AutoParking**

CALTRANS METHOD FOR DESIGN OF FLEXIBLE PAVEMENT

Input "R" value or "CBR" of native soil	16	
Type of Index Property - "R" value or "CBR" (C or R)	R	R Value
R Value used for Caltrans Method	16	
Input Traffic Index (TI)	5	
Calculated Total Gravel Equivalent (GE)	1.344	feet
Calculated Total Gravel Equivalent (GE)	16.128	inches
Calculated Gravel Factor (Gf) for A/C paving	2.53	
Gravel Factor for Base Course (Gf)	1.1	

Pavement sections provided below are considered equal; but, do not reflect reviewing agency minimums.

Gravel Equivalent GE (feet)	GE (inches)	Delta (inches)	INCHES A/C Section Thickness (inches)	INCHES Minimum Base (inches)	FEET A/C Section Thickness (feet)	FEET Minimum Base (feet)
0.63	7.60	8.52	3.0	7.8	0.25	0.65
0.74	8.87	7.26	3.5	6.6	0.29	0.55
0.84	10.14	5.99	4.0	5.4	0.33	0.45
0.89	10.65	5.48	4.2	4.8	0.35	0.40
0.95	11.41	4.72	4.5	4.2	0.38	0.35
1.01	12.17	3.96	4.8	3.6	0.40	0.30
1.06	12.67	3.45	5.0	3.0	0.42	0.25
1.16	13.94	2.19	5.5	1.8	0.46	0.15
1.27	15.21	0.92	6.0	0.6	0.50	0.05
1.37	16.48	-0.35	6.5		0.54	
1.48	17.74	-1.62	7.0		0.58	

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JN: **192846-10A** CONSULT: **SMP**
PROJECT: **Corydon Road and Mission Trail Road**

CALCULATION SHEET # **Driveways**

CALTRANS METHOD FOR DESIGN OF FLEXIBLE PAVEMENT

Input "R" value or "CBR" of native soil	16	
Type of Index Property - "R" value or "CBR" (C or R)	R	R Value
R Value used for Caltrans Method	16	
Input Traffic Index (TI)	6	
Calculated Total Gravel Equivalent (GE)	1.6128	feet
Calculated Total Gravel Equivalent (GE)	19.3536	inches
Calculated Gravel Factor (Gf) for A/C paving	2.31	
Gravel Factor for Base Course (Gf)	1.1	

Pavement sections provided below are considered equal; but, do not reflect reviewing agency minimums.

Gravel Equivalent			INCHES		FEET	
GE (feet)	GE (inches)	Delta (inches)	A/C Section Thickness (inches)	Minimum Base (inches)	A/C Section Thickness (feet)	Minimum Base (feet)
0.77	9.26	10.10	4.0	9.0	0.33	0.75
0.87	10.41	8.94	4.5	8.4	0.38	0.70
0.96	11.57	7.78	5.0	7.2	0.42	0.60
1.06	12.73	6.63	5.5	6.0	0.46	0.50
1.16	13.88	5.47	6.0	4.8	0.50	0.40
1.25	15.04	4.31	6.5	4.2	0.54	0.35
1.35	16.20	3.16	7.0	3.0	0.58	0.25
1.45	17.35	2.00	7.5	1.8	0.63	0.15
1.54	18.51	0.84	8.0	0.6	0.67	0.05
1.64	19.67	-0.31	8.5	0.0	0.71	0.00
1.74	20.83	-1.47	9.0	0.0	0.75	0.00

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JN: **192846-10A** CONSULT: **SMP**
PROJECT: **Corydon Rd / Mission Trail Road**

CALCULATION SHEET # **Entrances**

CALTRANS METHOD FOR DESIGN OF FLEXIBLE PAVEMENT

Input "R" value or "CBR" of native soil	16	
Type of Index Property - "R" value or "CBR" (C or R)	R	R Value
R Value used for Caltrans Method	16	
Input Traffic Index (TI)	7	
Calculated Total Gravel Equivalent (GE)	1.8816	feet
Calculated Total Gravel Equivalent (GE)	22.5792	inches
Calculated Gravel Factor (Gf) for A/C paving	2.14	
Gravel Factor for Base Course (Gf)	1.1	

Pavement sections provided below are considered equal; but, do not reflect reviewing agency minimums.

Gravel Equivalent GE (feet)	GE (inches)	Delta (inches)	INCHES A/C Section Thickness (inches)	Minimum Base (inches)	FEET A/C Section Thickness (feet)	Minimum Base (feet)
0.71	8.57	14.01	4.0	12.6	0.33	1.05
0.80	9.64	12.94	4.5	12.0	0.38	1.00
0.86	10.28	12.30	4.8	11.4	0.40	0.95
0.89	10.71	11.87	5.0	10.8	0.42	0.90
0.98	11.78	10.80	5.5	9.6	0.46	0.80
1.07	12.85	9.73	6.0	9.0	0.50	0.75
1.25	15.00	7.58	7.0	6.6	0.58	0.55
1.43	17.14	5.44	8.0	4.8	0.67	0.40
1.61	19.28	3.30	9.0	3.0	0.75	0.25
1.79	21.42	1.16	10.0	1.2	0.83	0.10
1.96	23.56	-0.99	11.0		0.92	

APPENDIX G

GENERAL EARTHWORK AND GRADING SPECIFICATIONS

EARTH-STRATA

General Earthwork and Grading Specifications

General

Intent: These General Earthwork and Grading Specifications are intended to be the minimum requirements for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These General Earthwork and Grading Specifications should be considered a part of the recommendations contained in the geotechnical report(s) and if they are in conflict with the geotechnical report(s), the specific recommendations in the geotechnical report shall supersede these more general specifications. Observations made during earthwork operations by the project Geotechnical Consultant may result in new or revised recommendations that may supersede these specifications and/or the recommendations in the geotechnical report(s).

The Geotechnical Consultant of Record: The Owner shall employ a qualified Geotechnical Consultant of Record (Geotechnical Consultant), prior to commencement of grading or construction. The Geotechnical Consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading or construction.

Prior to commencement of grading or construction, the Owner shall coordinate with the Geotechnical Consultant, and Earthwork Contractor (Contractor) to schedule sufficient personnel for the appropriate level of observation, mapping, and compaction testing.

During earthwork and grading operations, the Geotechnical Consultant shall observe, map, and document the subsurface conditions to confirm assumptions made during the geotechnical design phase of the project. Should the observed conditions differ significantly from the interpretive assumptions made during the design phase, the Geotechnical Consultant shall recommend appropriate changes to accommodate the observed conditions, and notify the reviewing agency where required.

The Geotechnical Consultant shall observe the moisture conditioning and processing of the excavations and fill materials. The Geotechnical Consultant should perform periodic relative density testing of fill materials to verify that the attained level of compaction is being accomplished as specified.

The Earthwork Contractor: The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of earth materials to receive compacted fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall be provided with the approved grading plans and geotechnical report(s) for his review and acceptance of responsibilities, prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the approved grading plans and geotechnical report(s). Prior to commencement of grading, the Contractor shall prepare and submit to the Owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "equipment" of work and the estimated quantities of daily earthwork contemplated for the site. The Contractor shall inform the Owner and the Geotechnical Consultant of work schedule changes and revisions to the work plan at least 24 hours in advance of such changes so that appropriate personnel will be available for observation and testing. No assumptions shall be made by the Contractor with regard to whether the Geotechnical Consultant is aware of all grading operations.

It is the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the earthwork operations in accordance with the applicable grading codes and agency ordinances, these specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). At the sole discretion of the Geotechnical Consultant, any unsatisfactory conditions, such as unsuitable earth materials, improper moisture conditioning, inadequate compaction, insufficient buttress keyway size, adverse weather conditions, etc., resulting in a quality of work less than required in the approved grading plans and geotechnical report(s), the Geotechnical Consultant shall reject the work and may recommend to the Owner that grading be stopped until conditions are corrected.

Preparation of Areas for Compacted Fill

Clearing and Grubbing: Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed in a method acceptable to the Owner, Geotechnical Consultant, and governing agencies.

The Geotechnical Consultant shall evaluate the extent of these removals on a site by site basis. Earth materials to be placed as compacted fill shall not contain more than 1 percent organic materials (by volume). No compacted fill lift shall contain more than 10 percent organic matter.

Should potentially hazardous materials be encountered, the Contractor shall stop work in the affected area, and a hazardous materials specialist shall immediately be consulted to evaluate the potentially hazardous materials, prior to continuing to work in that area.

It is our understanding that the State of California defines most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) as hazardous waste. As such, indiscriminate dumping or spillage of these fluids may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall be prohibited. The contractor is responsible for all hazardous waste related to his operations. The Geotechnical Consultant does not have expertise in this area. If hazardous waste is a concern, then the Owner should contract the services of a qualified environmental assessor.

Processing: Exposed earth materials that have been observed to be satisfactory for support of compacted fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Exposed earth materials that are not observed to be satisfactory shall be removed or alternative recommendations may be provided by the Geotechnical Consultant. Scarification shall continue until the exposed earth materials are broken down and free of oversize material and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction. The earth materials should be moistened or air dried to near optimum moisture content, prior to compaction.

Overexcavation: The Cut Lot Typical Detail and Cut/Fill Transition Lot Typical Detail, included herein provides a graphic illustration that depicts typical overexcavation recommendations made in the approved geotechnical report(s) and/or grading plan(s).

Keyways and Benching: Where fills are to be placed on slopes steeper than 5:1 (horizontal to vertical units), the ground shall be thoroughly benched as compacted fill is placed. Please see the three Keyway and Benching Typical Details with subtitles Cut Over Fill Slope, Fill Over Cut Slope, and Fill Slope for a graphic illustration. The lowest bench or smallest keyway shall be a minimum of 15 feet wide (or ½ the proposed slope height) and at least 2 feet into competent earth materials as advised by the Geotechnical Consultant. Typical benches shall be excavated a minimum height of 4 feet into competent earth materials or as recommended by the Geotechnical Consultant. Fill placed on slopes steeper than 5:1 should be thoroughly benched or otherwise excavated to provide a flat subgrade for the compacted fill.

Evaluation/Acceptance of Bottom Excavations: All areas to receive compacted fill (bottom excavations), including removal excavations, processed areas, keyways, and benching, shall be observed, mapped, general elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive compacted fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to placing compacted fill. A licensed surveyor shall provide the survey control for determining elevations of bottom excavations, processed areas, keyways, and

benching. The Geotechnical Consultant is not responsible for erroneously located, fills, subdrain systems, or excavations.

Fill Materials

General: Earth material to be used as compacted fill should to a large extent be free of organic matter and other deleterious substances as evaluated and accepted by the Geotechnical Consultant.

Oversize: Oversize material is rock that does not break down into smaller pieces and has a maximum diameter greater than 8 inches. Oversize rock shall not be included within compacted fill unless specific methods and guidelines acceptable to the Geotechnical Consultant are followed. For examples of methods and guidelines of oversize rock placement see the enclosed Oversize Rock Disposal Detail. The inclusion of oversize materials in the compacted fill shall only be acceptable if the oversize material is completely surrounded by compacted fill or thoroughly jetted granular materials. No oversize material shall be placed within 10 vertical feet of finish grade or within 2 feet of proposed utilities or underground improvements.

Import: Should imported earth materials be required, the proposed import materials shall meet the requirements of the Geotechnical Consultant. Well graded, very low expansion potential earth materials free of organic matter and other deleterious substances are usually sought after as import materials. However, it is generally in the Owners best interest that potential import earth materials are provided to the Geotechnical Consultant to determine their suitability for the intended purpose. At least 48 hours should be allotted for the appropriate laboratory testing to be performed, prior to starting the import operations.

Fill Placement and Compaction Procedures

Fill Layers: Fill materials shall be placed in areas prepared to receive fill in nearly horizontal layers not exceeding 8 inches in loose thickness. Thicker layers may be accepted by the Geotechnical Consultant, provided field density testing indicates that the grading procedures can adequately compact the thicker layers. Each layer of fill shall be spread evenly and thoroughly mixed to obtain uniformity within the earth materials and consistent moisture throughout the fill.

Moisture Conditioning of Fill: Earth materials to be placed as compacted fill shall be watered, dried, blended, and/or mixed, as needed to obtain relatively uniform moisture contents that are at or slightly above optimum. The maximum density and optimum moisture content tests should be performed in accordance with the American Society of Testing and Materials (ASTM test method D1557-00).

Compaction of Fill: After each layer has been moisture-conditioned, mixed, and evenly spread, it should be uniformly compacted to a minimum of 90 percent of maximum dry density as determined by ASTM test method D1557-00. Compaction equipment shall be adequately sized and be either specifically designed for compaction of earth materials or be proven to consistently achieve the required level of compaction.

Compaction of Fill Slopes: In addition to normal compaction procedures specified above, additional effort to obtain compaction on slopes is needed. This may be accomplished by backrolling of slopes with sheepsfoot rollers as the fill is being placed, by overbuilding the fill slopes, or by other methods producing results that are satisfactory to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill and the slope face shall be a minimum of 90 percent of maximum density per ASTM test method D1557-00.

Compaction Testing of Fill: Field tests for moisture content and relative density of the compacted fill earth materials shall be periodically performed by the Geotechnical Consultant. The location and frequency of tests shall be at the Geotechnical Consultant's discretion based on field observations. Compaction test locations will not necessarily be random. The test locations may or may not be selected to verify minimum compaction requirements in areas that are typically prone to inadequate compaction, such as close to slope faces and near benching.

Frequency of Compaction Testing: Compaction tests shall be taken at minimum intervals of every 2 vertical feet and/or per 1,000 cubic yards of compacted materials placed. Additionally, as a guideline, at least one (1) test shall be taken on slope faces for each 5,000 square feet of slope face and/or for each 10 vertical feet of slope. The Contractor shall assure that fill placement is such that the testing schedule described herein can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork operations to a safe level so that these minimum standards can be obtained.

Compaction Test Locations: The approximate elevation and horizontal coordinates of each test location shall be documented by the Geotechnical Consultant. The Contractor shall coordinate with the Surveyor to assure that sufficient grade stakes are established. This will provide the Geotechnical Consultant with sufficient accuracy to determine the approximate test locations and elevations. The Geotechnical Consultant can not be responsible for staking erroneously located by the Surveyor or Contractor. A minimum of two grade stakes should be provided at a maximum horizontal distance of 100 feet and vertical difference of less than 5 feet.

Subdrain System Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the approved grading plan, and the typical details provided herein. The Geotechnical Consultant may recommend additional subdrain systems and/or changes to the subdrain systems described herein, with regard to the extent, location, grade, or material depending on conditions encountered during grading or other factors. All subdrain systems shall be surveyed by a licensed land surveyor (except for retaining wall subdrain systems) to verify line and grade after installation and prior to burial. Adequate time should be allowed by the Contractor to complete these surveys.

Excavation

All excavations and over-excavations for remedial purposes shall be evaluated by the Geotechnical Consultant during grading operations. Remedial removal depths indicated on the geotechnical plans are estimates only. The actual removal depths and extent shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading operations. Where fill over cut slopes are planned, the cut portion of the slope shall be excavated, evaluated, and accepted by the Geotechnical Consultant prior to placement of the fill portion of the proposed slope, unless specifically addressed by the Geotechnical Consultant. Typical details for cut over fill slopes and fill over cut slopes are provided herein.

Trench Backfill

1) The Contractor shall follow all OHSA and Cal/OSHA requirements for trench excavation safety.

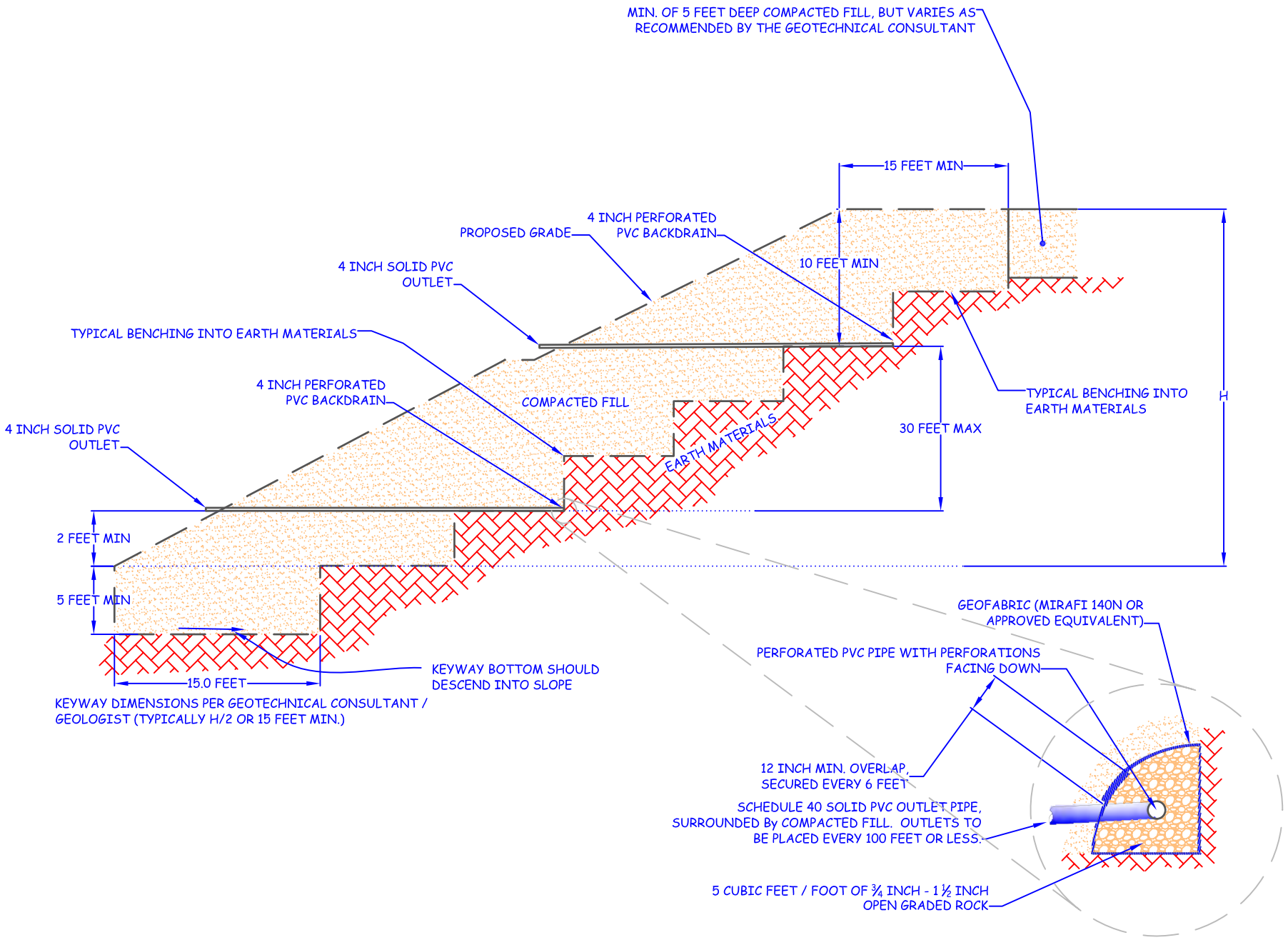
2) Bedding and backfill of utility trenches shall be done in accordance with the applicable provisions in the Standard Specifications of Public Works Construction. Bedding materials shall have a Sand Equivalency more than 30 (SE>30). The bedding shall be placed to 1 foot over the conduit and thoroughly jetting to provide densification. Backfill should be compacted to a minimum of 90 percent of maximum dry density, from 1 foot above the top of the conduit to the surface.

3) Jetting of the bedding materials around the conduits shall be observed by the Geotechnical Consultant.

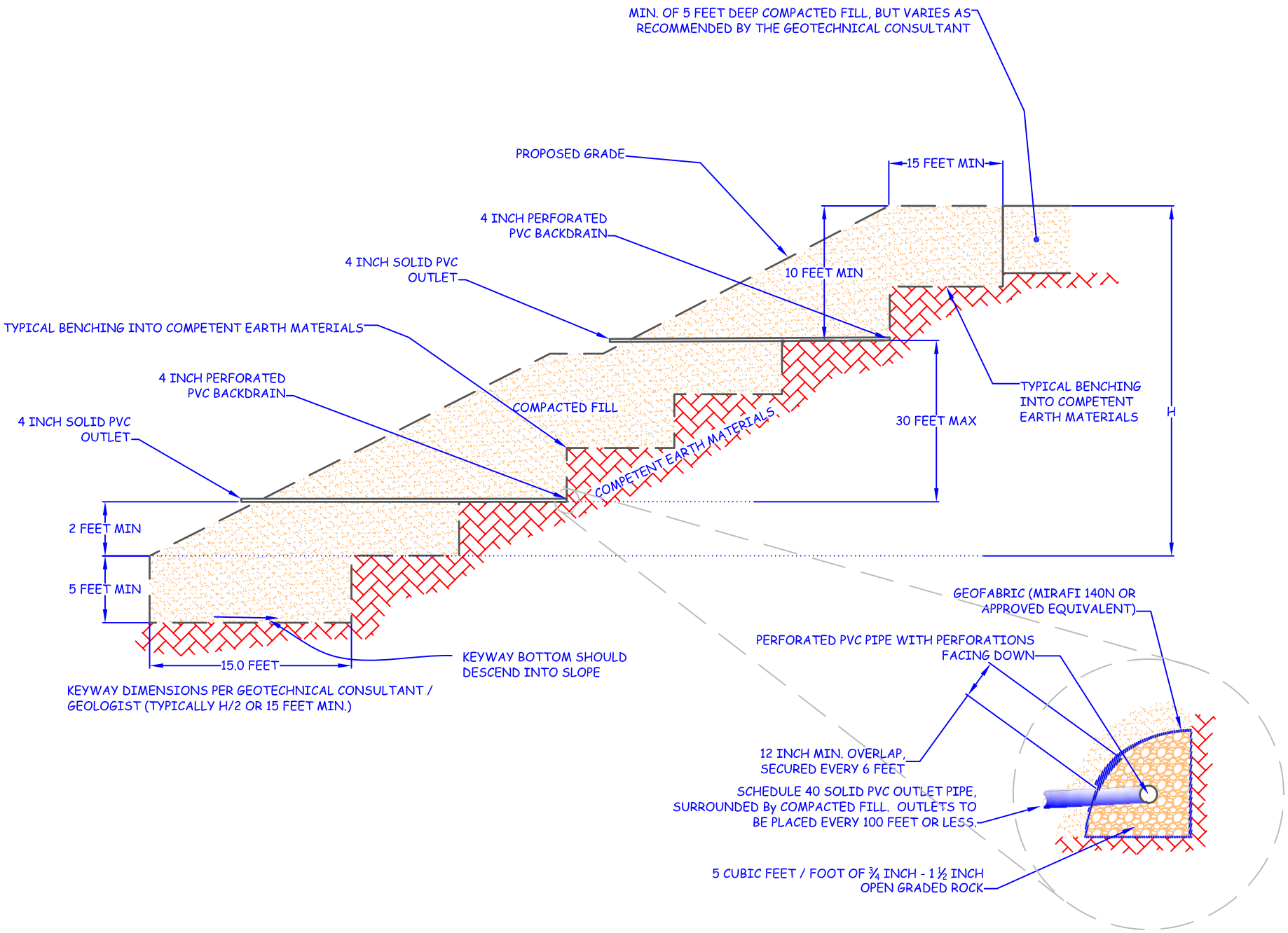
4) The Geotechnical Consultant shall test trench backfill for the minimum compaction requirements recommended herein. At least one test should be conducted for every 300 linear feet of trench and for each 2 vertical feet of backfill.

5) For trench backfill the lift thicknesses shall not exceed those allowed in the Standard Specifications of Public Works Construction, unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment or method.

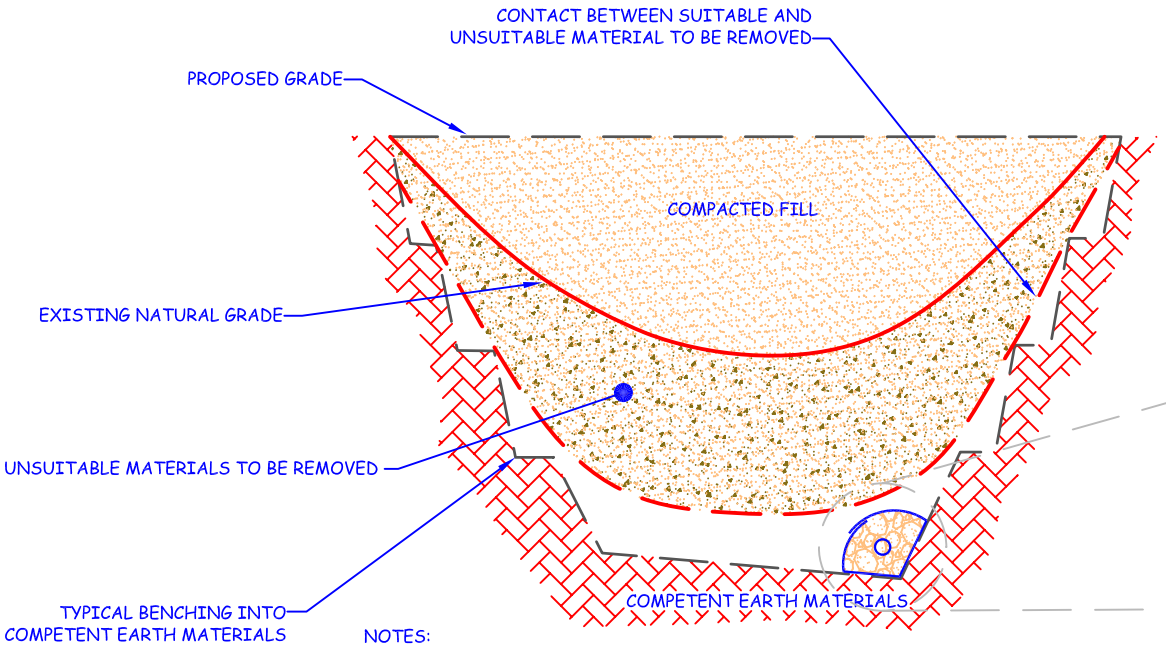
STABILIZATION FILL TYPICAL DETAIL

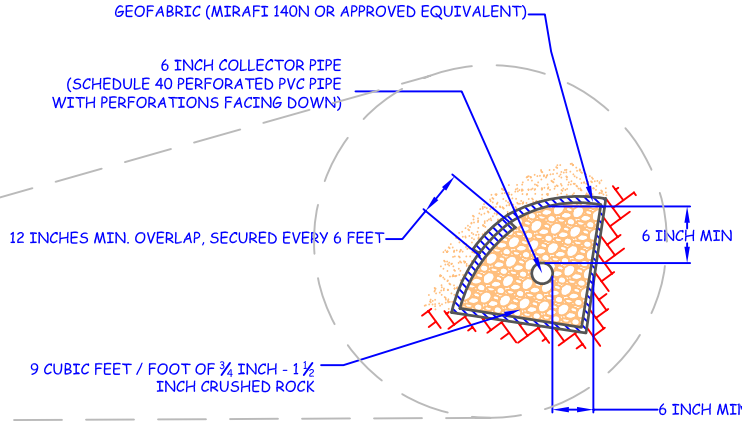


BUTTRESS TYPICAL DETAIL



CANYON SUBDRAIN SYSTEM TYPICAL DETAIL

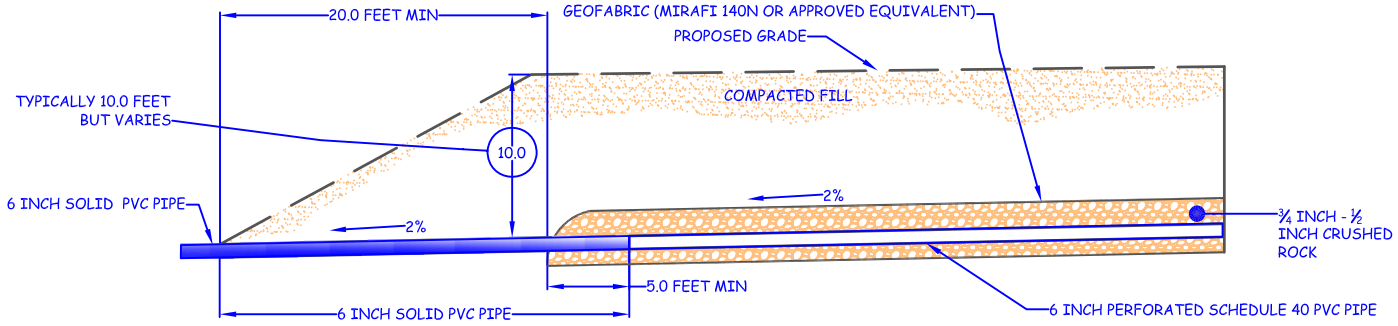




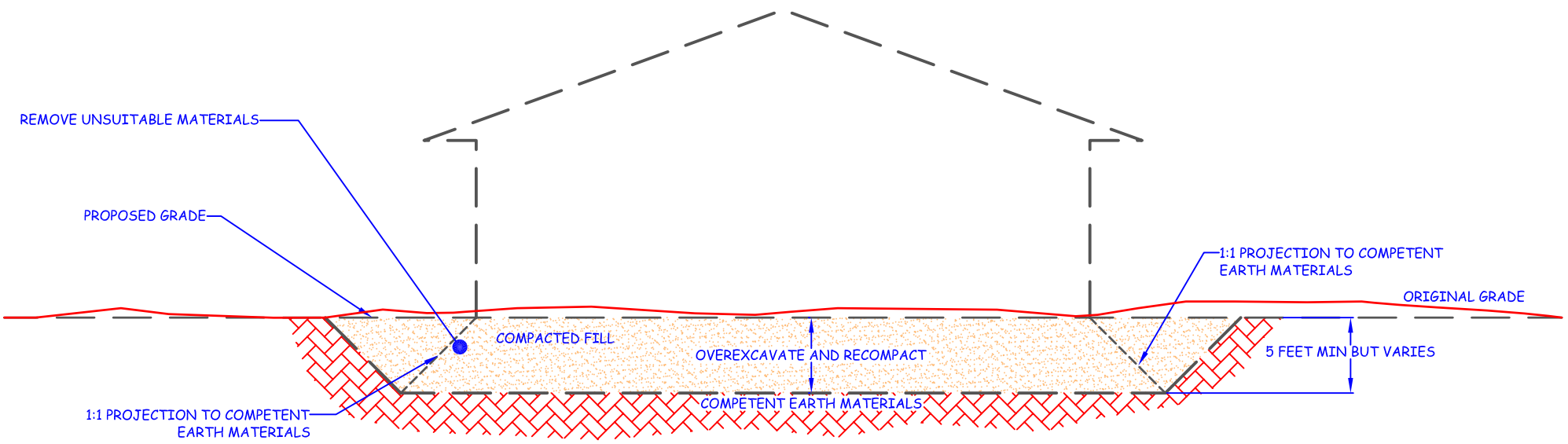
NOTES:
1 - CONTINUOUS RUNS IN EXCESS OF 500 FEET LONG WILL REQUIRE AN 8 INCH DIAMETER PIPE.

2 - FINAL 20 FEET OF PIPE AT OUTLET WILL BE SOLID AND BACKFILLED WITH COMPACTED FINE-GRAINED EARTH MATERIALS.

CANYON SUBDRAIN TYPICAL OUTLET



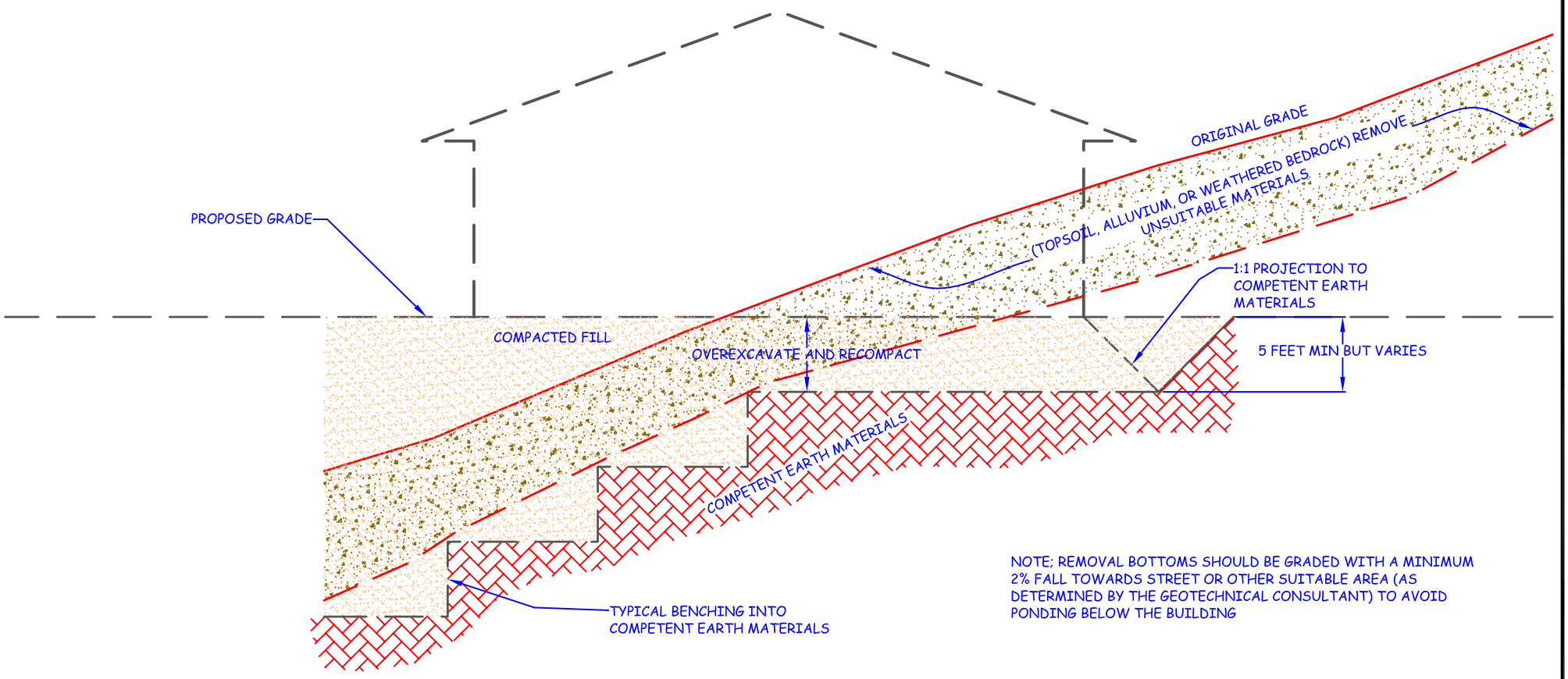
CUT LOT TYPICAL DETAIL



NOTE: REMOVAL BOTTOMS SHOULD BE GRADED WITH A MINIMUM 2% FALL TOWARDS STREET OR OTHER SUITABLE AREA (AS DETERMINED BY THE GEOTECHNICAL CONSULTANT) TO AVOID PONDING BELOW THE BUILDING

NOTE: WHERE DESIGN CUT LOTS ARE EXCAVATED ENTIRELY INTO COMPETENT EARTH MATERIALS, OVEREXCAVATION MAY STILL BY NEEDED FOR HARD-ROCK CONDITIONS OR MATERIALS WITH VARIABLE EXPANSION POTENTIALS

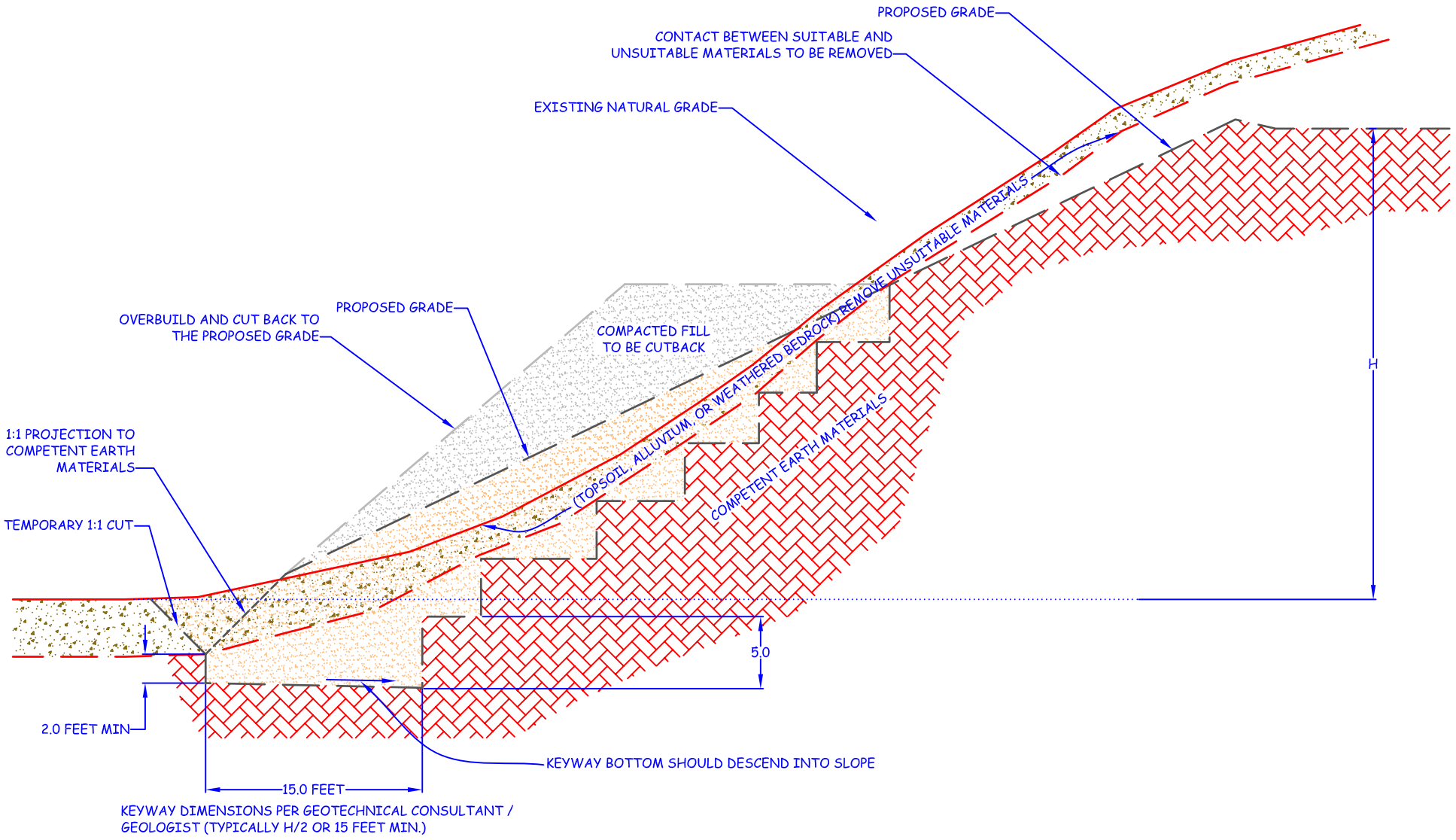
CUT / FILL TRANSITION LOT TYPICAL DETAIL



NOTE; REMOVAL BOTTOMS SHOULD BE GRADED WITH A MINIMUM 2% FALL TOWARDS STREET OR OTHER SUITABLE AREA (AS DETERMINED BY THE GEOTECHNICAL CONSULTANT) TO AVOID PONDING BELOW THE BUILDING

NOTE: WHERE DESIGN CUT LOTS ARE EXCAVATED ENTIRELY INTO COMPETENT EARTH MATERIALS, OVEREXCAVATION MAY STILL BY NEEDED FOR HARD-ROCK CONDITIONS OR MATERIALS WITH VARIABLE EXPANSION POTENTIALS

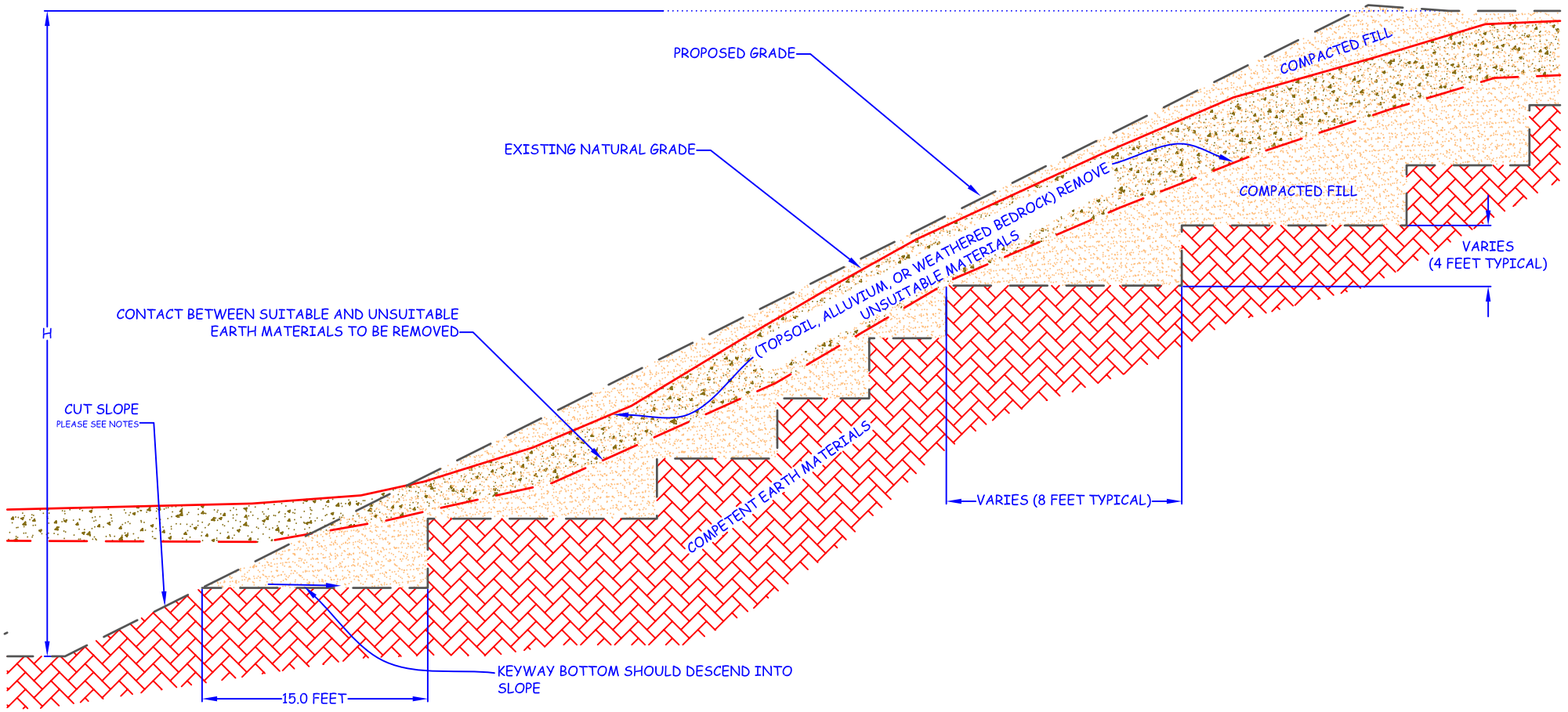
KEYWAY & BENCHING TYPICAL DETAILS
CUT OVER FILL SLOPE



NOTE:

NATURAL SLOPES STEEPER THAN 5:1 (H:V) MUST BE BENCHED INTO COMPETENT EARTH MATERIALS

KEYWAY & BENCHING TYPICAL DETAILS
FILL OVER CUT SLOPE



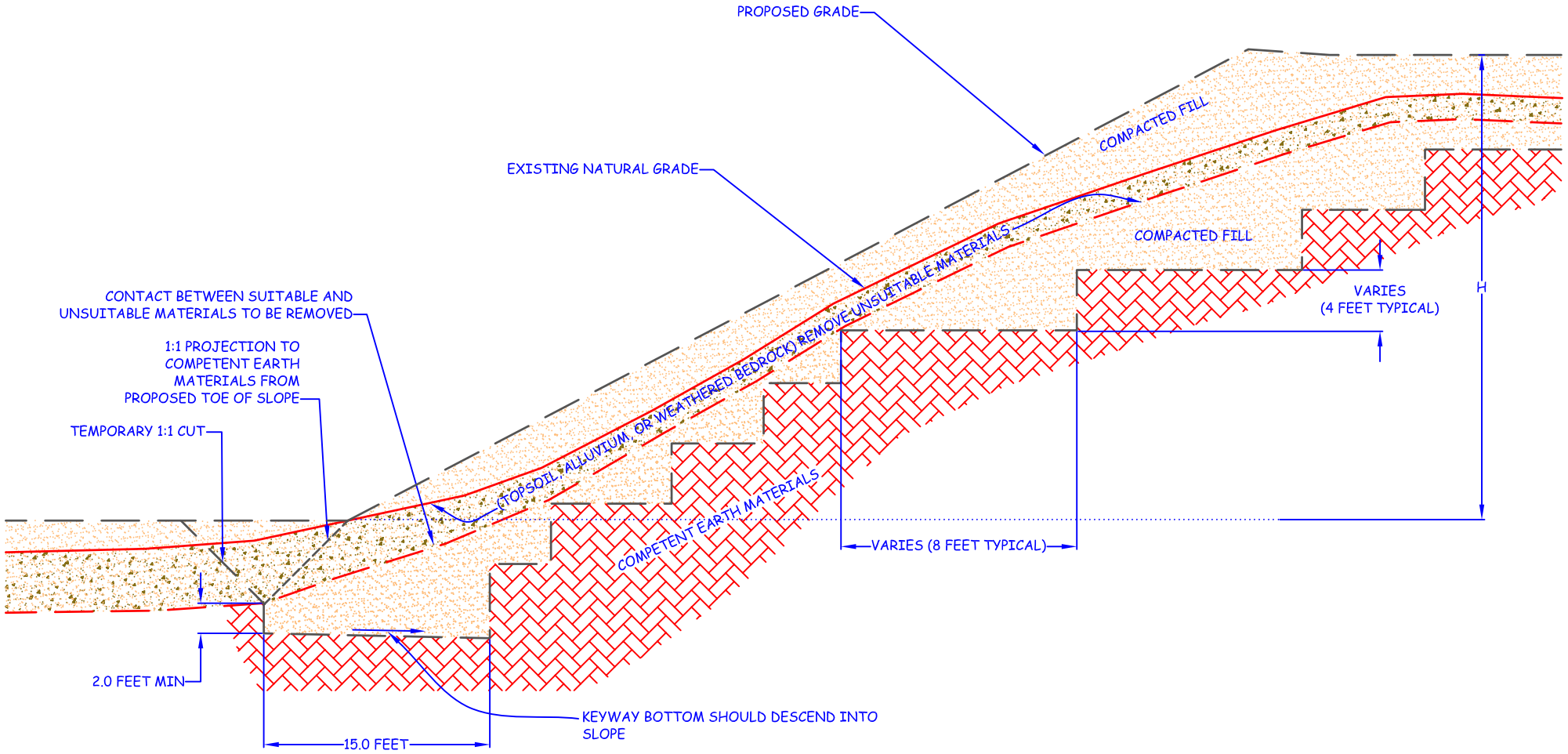
KEYWAY DIMENSIONS PER GEOTECHNICAL CONSULTANT / GEOLOGIST (TYPICALLY H/2 OR 15 FEET MIN.)

NOTES:

NATURAL SLOPES STEEPER THAN 5:1 (H:V) MUST BE BENCHED INTO COMPETENT EARTH MATERIALS

THE CUT SLOPE MUST BE CONSTRUCTED FIRST

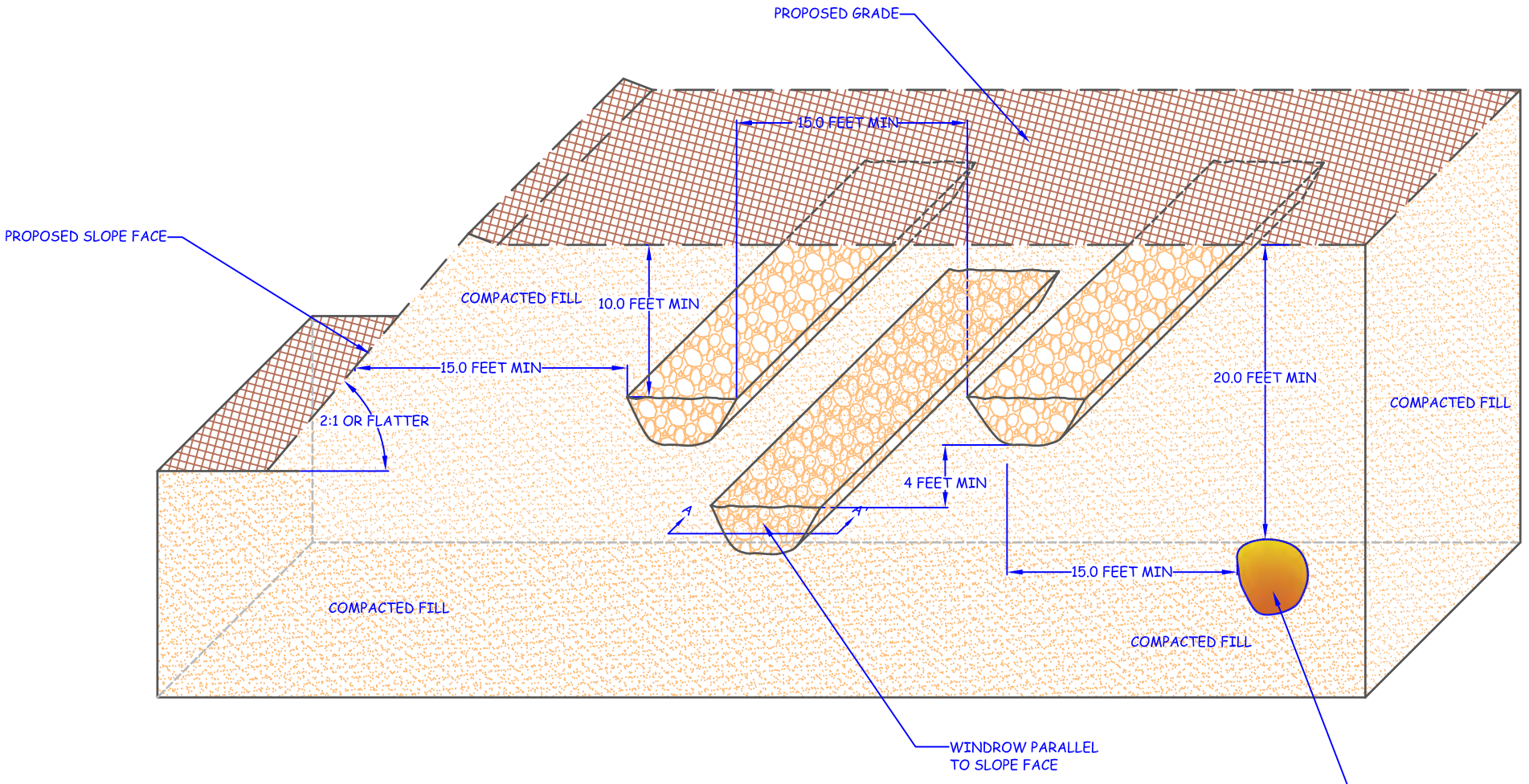
KEYWAY & BENCHING TYPICAL DETAILS
FILL SLOPE



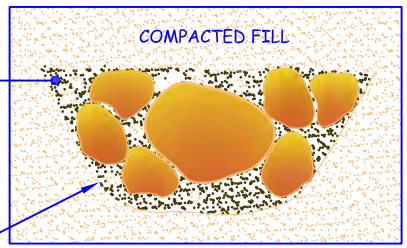
NOTES:

NATURAL SLOPES STEEPER THAN 5:1 (H:V) MUST BE BENCHED INTO COMPETENT EARTH MATERIALS

OVERSIZE ROCK TYPICAL DETAIL

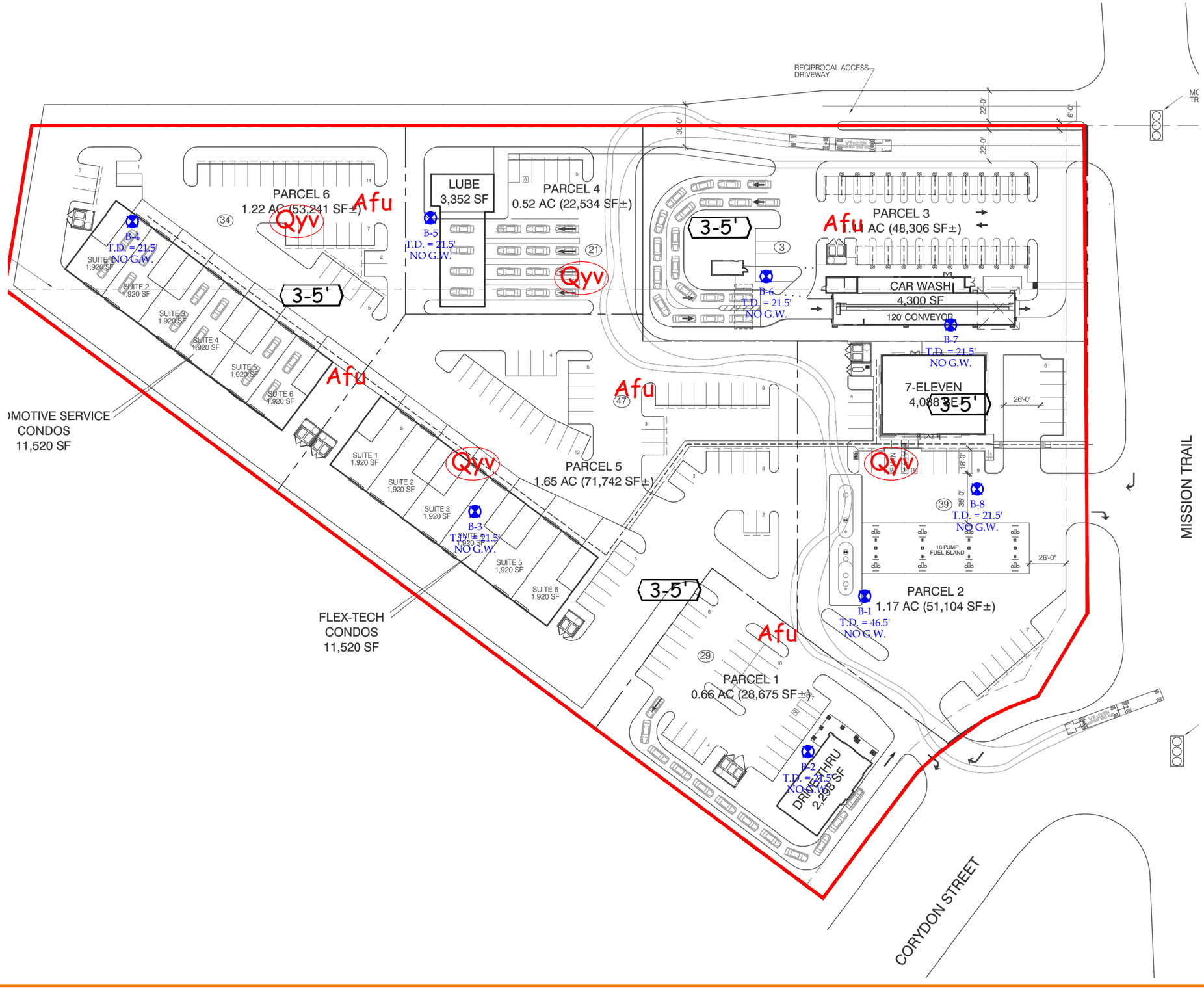


CROSS SECTION A-A'



NOTES:

OVERSIZE ROCK IS LARGER THAN
8 INCHES IN MAX DIAMETER



LEGEND

Locations are Approximate

Geologic Units

Afu - Artificial Fill, Undocumented

Qyv - Quaternary Young Alluvial Valley Deposits

Symbols

- Limits of Report

B-8 T.D. = 21.5' NO G.W. - Boring Location Including Total Depth and Depth to Groundwater

3-5' - Recommended Removal Depths

GEOTECHNICAL MAP

LOCATED NORTHWEST CORNER OF CORYDON ROAD AND MISSION TRAIL ROAD

CITY OF LAKE ELSINORE, RIVERSIDE COUNTY, CALIFORNIA

APN 370-050-026

PROJECT	PROPOSED COMMERCIAL PLAZA		
CLIENT	MR. MARK COOPER		
PROJECT NO.	192846-10A		
DATE	SEP 2019		
SCALE	1:70		
DWG XREFS			
REVISION			
DRAWN BY	JF	PLATE	1 OF 1

Earth Strata Geotechnical Services, Inc.
Geotechnical, Environmental and Materials Testing Consultants
www.ESGSINC.com (951) 397-8315

Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use is Required

Earth Strata Geotechnical Services, Inc.
Geotechnical, Environmental and Materials Testing Consultants
www.ESGSINC.com (951) 397-8315

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Of

UNDEVELOPED PROPERTY
ASSESSOR'S PARCEL NUMBER
370-050-026
LAKE ELSINORE, CALIFORNIA 92530

Prepared for:

Mr. Brandon Humann
R.E.D. Corydon LLC
Core States Group
4240 East Jurupa Street, Suite 402
Ontario, California 91761

Prepared by:

Earth Strata Geotechnical Services
42184 Remington Avenue
Temecula, California 92590
(951) 461-4028
www.earth-strata.com
E-S Project #P192846-60A

Issue Date: September 27, 2019

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PHASE I/II ESA EXECUTIVE SUMMARY OVERVIEW Undeveloped Vacant Property Lake Elsinore, CA				
Section Topic	**No RECs Identified**	**Non-REC Issue Identified**	**RECs Identified**	**Comments**
Historical Usage	✔			
Regulatory Database Review (on-site)	✔			
Regulatory Database Review (nearby sites)	✔			
On-site Operations	✔			
Haz. Mat. Handling	✔			
Haz. Waste Handling	✔			
USTs/ ASTs	✔			
ACMs	✔			
LBP	✔			
PCBs	✔			
Radon	✔			
Other	✔			

SECTION I.
EXECUTIVE SUMMARY & RECOMMENDATIONS

Earth Strata Geotechnical Services, (E-S) was retained by Core States Group, to perform a Phase I Environmental Site Assessment (Phase I ESA or Assessment) of a site Located on the northwest corner of Corydon Road and Mission Trail, City of Lake Elsinore, Riverside County, California. At the time of the September 20, 2019 site visit, the subject property consisted of one undeveloped parcel, totaling approximately 6 Acres. The subject site is located within a mixed-use area.

This Phase I ESA was performed in accordance with the scope and limitations of the *American Society for Testing and Materials (ASTM) Phase I ESA Standard E1527-2013*, (Equivalent to the USEPA's All Appropriate Inquiry [AAI] Standard), and the scope of work defined in this report, as well as the signed service agreement. The following summarizes E-S's independent conclusions and best professional judgment based upon information available to us at the time of this Assessment.

During the site visit, the E-S Assessor was not accompanied by anyone due to the undeveloped nature of the Site. However, Mr. Humann (Core States Group) was identified as the Key Site Managers defined by ASTM E1527-2013, the Key Site Manager is that person having good knowledge of the uses and physical characteristics of the subject property, and in a position to provide reasonably accurate information for the Key Site Manager Environmental Questionnaire. The questioner was performed by Mr. Humann and E-S and can be found in Appendix E. Based upon the limited site reconnaissance, historical review, regulatory records review, soil sampling and analysis and other information detailed within this report; this Assessment did not identify any evidence of ASTM Recognized Environmental Conditions (RECs) or other issues in connection with the subject property.

CONCLUSIONS AND RECOMMENDATIONS:

The Site consists of approximately 6 acres in Lake Elsinore, California, and currently vacant and undeveloped. Based on the results of this Phase I ESA, no further investigation is recommended for this site.

An Executive Summary Overview is also included in the previous section. However, when making any decisions concerning the findings of this Assessment, please also refer to the entirety of this report, which may present other items of interest that are not discussed in the Executive Summary, or further details regarding the above items. In addition, please refer to the Data Gaps section (IV-H) of this report regarding information that may have been unavailable or incomplete which may have a bearing on the findings or usage of this report.

SECTION II.
SCOPE OF WORK & LIMITATIONS

PURPOSE

The primary goal of this Phase I Environmental Site Assessment is to assist the client in satisfying one of the requirements to qualify for the "innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability" (42 U.S.C. § 9601 et. seq.). Qualification for these limitations is predicated on the assumption that "…the defendant must have undertaken, at the time of acquisition, all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice in an effort to minimize liability…." The secondary goal of this Assessment is to provide information that will assist in evaluating the risk of potential significant value impairment of the security interest due to environmental impacts.

PROTOCOL

The *American Society for Testing and Materials (ASTM) Phase I ESA Standard E1527-2013* is the most current method used in attempting to perform the due diligence required to achieve the above purpose. The E1527-2013 Standard was created by the ASTM "…in an effort to define good commercial and customary practice in the United States of America for conducting an environmental site assessment.…" and is equivalent to the USEPA's All Appropriate Inquiry [AAI] Standard issued November 1, 2013. The ASTM Standard E1527-2013 is intended to identify recognized environmental conditions (RECs) in connection with a given property. The term recognized environmental conditions is not intended to include "*de minimus*" conditions that generally do not present a material risk of harm or that are unlikely to be the subject of enforcement actions by governmental agencies. Other conditions or issues that are beyond the ASTM scope may also be discussed in this report, as detailed within each section.

SCOPE OF WORK

Utilizing ASTM Standard E1527-2013, as well as the scope of work discussed below and in the work authorization document, this Assessment involved: A site reconnaissance of the subject property, limited observations of adjoining properties, a review of the historical usage of the subject property, and a review of relevant documentation provided by various public and private sources (including the client and/or owner of the subject property) to identify conditions indicative of releases or threatened releases of hazardous substances, as defined in CERCLA Section 101 (14) U.S.C. § 312.1(c) evaluate the presence or likely existence of:

- Recognized environmental conditions, specified by ASTM E1527-2013 as: "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products

into structures on the property or into the ground, groundwater or surface water of the property."

- A brief evaluation and assessment of potential environmental issues which may not rise to the level of recognized environmental conditions, such as: obviously improper hazardous material or waste handling, suspect asbestos-containing materials, lead-based paint, polychlorinated bi-phenyls, and radon gas.

LIMITATIONS

As discussed in ASTM E1527-2013, no Phase I ESA can completely eliminate uncertainty regarding the potential for RECs in connection with a subject property. This investigation is simply intended to reduce uncertainty within reasonable limits of time and cost.

Refer to Section VI-A for a brief discussion of some (but not necessarily all) specific limitations to E-S's subject property observations at the time of the site visit. The observations contained within this Assessment are based upon conditions readily observable during the site visit. These observations are typically unable to address conditions of areas not inspected, hidden from view, subsurface soil, groundwater, underground storage tanks, neighboring properties, and the like, unless specifically mentioned. It is not the purpose of this Assessment to determine the actual presence, or degree or extent of contamination (if any) at the subject property. Unless specifically noted within this report, this Assessment does not include observations, testing, coring, or sampling analysis to address groundwater, soil, or extraneous materials contamination (including mold, bio-hazardous or radiologic issues) in or on the subject property. E-S also is not providing geological interpretations or recommendations. Potential Vapor Intrusion issues from on or off-site sources are not evaluated. Electromagnetic issues (e.g., proximity to high-voltage power lines) are also not included. This Assessment does not include or address reasonably ascertainable environmental liens recorded against the subject property, unless stated.

E-S makes no warranties or guarantees as to the accuracy or completeness of information obtained from or compiled by others. Information may also exist which was beyond the scope of this investigation or was not provided to E-S that may have an impact on the conclusions of this Assessment. This Assessment does not attempt to address past or forecast future site conditions. E-S also cannot forecast or be responsible for changes in regulatory guidelines or protocols, industry standards or the like, which may affect the conclusions and/or future usage of this report.

This Assessment has been conducted and prepared in accordance with generally accepted practices and procedures exercised by reputable professionals under similar circumstances. E-S makes no other warranties or guarantees, either expressed or implied, as to the findings, opinions, or recommendations contained in the report, or as to the existence or non-existence of RECs or other issues at the subject property.

SECTION III.
GENERAL SITE DESCRIPTION

During the site visit, the property is undeveloped and vacant. It is currently disturbed by mowing and sparsely covered with naturally occurring vegetation. A storm-water channel runs along the western border of the property, High voltage power lines are located along Mission Trails Road adjacent to the east of the property and water lines run along Corydon Road adjacent to the property. The subject property location and pictures are shown on various Figures in Appendix A.

A. CLIENT PROVIDED INFORMATION

As discussed in ASTM E1527-2013, the user (e.g., Client) is required to perform certain tasks or provide certain information to E-S in order to identify potential RECs. Tasks or information to be provided by the Client include: 1) review of judicial and title records for environmental liens, environmental deed restrictions or activity and use limitations (AULs); 2) provide specialized, actual, commonly known or reasonably ascertainable knowledge regarding the property; and, 3) identify reasons for a significantly lower purchase price (if applicable). The client has not provided any other information.

RELIANCE:

This report has been prepared for the benefit of the Client. The report may not be relied upon by any other person or entity without the express written consent of E-S and the Client. E-S and Client expressly authorize Core States Group and their respective successors and/or assigns to rely upon this report to the same extent as the Client.

B. ADJOINING AND ADJACENT PROPERTIES

As discussed in ASTM E1527-2013, an adjoining property is any real property whose border is contiguous or partially contiguous with the subject property or would be if the properties were not separated by a roadway, street or other public thoroughfare. For the purposes of this report, an adjacent property is any real property located within approximately one block or less of the subject property's border.

Specifically, the subject property is bordered by the following:

North: Immediately by an abandoned dirt bike sports track property.

East: Immediately by Mission Trail, residential and commercial properties.

South: Immediately by Corydon Road, commercial, residential and undeveloped properties.

West: Immediately by Aerofoam Industries, light industrial property.

C. USGS TOPOGRAPHIC MAP

The subject property's physical setting was researched employing a United States Geological Survey (USGS) 7.5 Minute Topographic Quadrangle (Quad) Map relevant to the subject property. The USGS 7.5 Minute Quad Map has an approximate scale of 1 inch to 24,000 feet, and shows physical features such as wetlands, roadways, mines, and buildings. The USGS 7.5 Minute Quad Map was used as the Standard Physical Setting Source and is sufficient as a single reference. The Lake Elsinore, California Quad Map shows no physical features that are likely to environmentally impact the subject property. The subject property is identified as a rural residential developed, rectangular property. No mines, aboveground storage tanks, or wetlands were depicted in the immediate area of the subject property; however, there is an intermittent wash to the west and to the east. The elevation of the subject property is approximately 1275 feet above mean sea level with a gentle topographic gradient to the southeast (USGS Lake elsinore 7.5' Quadrangle). A copy of the map can be found in the Appendix B.

D. GENERAL HYDROGEOLOGIC CHARACTERISTICS

The Elsinore Groundwater Basin underlies the Elsinore Valley in western Riverside County. The basin is bounded on the southwest by the Santa Ana and Elsinore Mountains along the Willard fault, a splay of the active Elsinore fault zone. The basin adjoins the Temecula Valley Groundwater Basin on the southeast at a low surface drainage divide. The basin is bounded on the northwest by the Temescal Subbasin of the Upper Santa Ana River Valley Groundwater Basin at a constriction in Temescal Wash. The basin is bounded on the northeast by nonwater-bearing rocks of the Peninsular Ranges along the Glen Ivy fault. Average annual precipitation ranges from 12 to 14 inches. Lake Elsinore lies in a closed basin formed between strands of the active Elsinore fault zone. (California Department of Water Resources (DWR). 1975. *California's Ground Water*. Bulletin 118). The Elsinore Groundwater Basin contains alluvial fan, floodplain, and lucustrine deposits, which are underlain by alluvium of the Pauba Formation (DWR 1981). The maximum thickness of sedimentary deposits reaches 2,300 feet beneath Lake Elsinore (DWR 1981). Specific yield for the basin ranges from about 6 to 16 percent and averages about 7.6 percent (SWRB 1956). Please see the EDR Summary Radius Map Report for Hydrologic and Geologic information, Appendix C.

SECTION IV.
HISTORICAL REVIEW

The site historical review is used to develop an understanding of the previous uses of the subject property and surrounding area in an effort to identify the likelihood of past uses, or activities having environmentally impacted, the subject property. The historical review consisted of a search of various public and private Standard Historical Sources, as detailed in the sections below.

As defined by ASTM E1527-2013, a Standard Historical Source is considered complete if the information contained within the source identifies all uses of the subject property from the time the property was first used for residential, agricultural, commercial, industrial or governmental purposes. Ideally, the information should be available in either five-year intervals or site milestone events (i.e., initial construction activities, demolition activities, etc.). However, available public and private historical sources do not always fulfill this goal, in which case, the closest approximation is made based upon the sources readily available at the time of historical review.

Historical Review Summary: From the historical information review discussed below, E-S concludes that the subject property has never been developed and the adjacent commercial parcels were developed in the 2000's. No dry cleaners, gasoline stations, major landfills, military bases, or heavy industrial businesses were identified on the subject property. Currently the site is disturbed undeveloped land with naturally occurring vegetation.

A. AERIAL PHOTOGRAPH REVIEW

Aerial photographs were reviewed by E-S to evaluate past land-use patterns of the subject property and vicinity. The photos were supplied by EDR and are from the following years 1938, 1949, 1953, 1961, 1967, 1978, 1985, 1989, 1996, 2002, 2006, 2009, 2012 and 2016. Copies of representative aerial photographs can be found in Appendix B. This review revealed the following:

1938 to 2005
The subject property is in a rural sparsely residential developed area and has never been developed.

2005 to Present
The subject property has never been developed. The adjacent light industrial commercial properties appear in 2005. The surrounding area has continued to grow with commercial and residential properties as well as the typical infrastructure improvement of roads and utilities.

B. BUILDING PERMIT REVIEW

In an effort to evaluate the development history of the subject property, E-S reviewed the Riverside County, Department of Planning website (http://www3.tlma.co.riverside.ca.us/). Review of this information indicated the Assessor's Parcel Numbers for the subject property are 370-050-026. The recorded lot size for the above is approximately 6 acres. Thomas Bros. page 896, grid J3 and page 897 grid A3. No other information significant to this report was obtained from the Assessor's data. The data can also be found in the Appendix D.

C. SANBORN FIRE INSURANCE MAP REVIEW

E-S requested Sanborn Fire Insurance Maps for the subject property; however, no maps were available for the subject property.

D. CITY STREET DIRECTORY REVIEW

E-S did not request a "City Street Directory" for the area of the subject property due to the residential rural environment.

E. HISTORICAL TOPOGRAPHIC MAP REVIEW

Historical topographic maps were reviewed on line by E-S. No significant additional information was revealed after review.

F. INTERVIEWS

As specified in ASTM E1527-2013, interviews will be conducted with parties including present land owners and occupants, past land owners and occupants, and adjoining property owners, as appropriate and as available. E-S interviewed Mr. Humann the Key Site Manager and he was able to help answer questions and fill out the questionnaire. No significant additional information was revealed after the interviews.

G. RECORDED LAND TITLE RECORDS

As specified in ASTM E1527-2013 *recorded land title records* mean records of historical fee ownership, which may include leases, land contracts and AULs on or of the *property* recorded in the place where land title records are, by law or custom, recorded for the local jurisdiction in which the *property* is located (often such records are kept by a municipal or county recorder or clerk). Such records may be obtained from title companies or directly from the local government agency. Information about the title to the *property* that is recorded in a U.S. district court or any place other than where land title records are, by law or custom, recorded for the local jurisdiction in which the *property* is located, are not considered part of *recorded land title records*, because often this source will provide only names of previous *owners*, lessees, easement holders, etc., and little or no information about uses or occupancies of the *property*, but when employed in combination with another source *recorded land title records* may provide helpful information about uses of the *property*. This source cannot be the sole historical source consulted. If this source is consulted, at least one additional standard historical source must also be consulted.

A title report was provided, and such a report typically does not list all documents related to the subject property, simply those that the title insurer wants to exclude from coverage and/ or that are of potential interest to the transaction. Title reports may also be one method to evaluate the environmental liens search required by the ASTM E1527-2013 standard, which is required to be performed by the report User. A liens/use limitation search by the User is required by the ASTM/AAI standard 180 days or less prior to acquisition of a property. E-S reviewed the title report and did not find any significant information, the title report can be found in Appendix D.

H. DATA GAPS

As specified in ASTM E1527-2013, data gaps are defined as "a lack or inability to obtain information required by the standards and practices listed in the regulation despite good faith efforts by the Environmental Professional or prospective landowner to gather such information". Data failure occurs when historical research does not identify standard historical sources that are "reasonably ascertainable" and "likely to provide useful information to identify prior uses of the property". Per ASTM E1527-13, the assessment must document data failure and give reasons why historical sources were not available or excluded (if applicable). Based on E-S's research, no significant data gaps were identified for the subject site.

SECTION V.
AGENCY RECORDS REVIEW

In an effort to evaluate whether the subject property and/or nearby sites have reported USTs, hazardous waste generation, or hazardous material releases, regulatory information from the federal, state, and local agencies listed below were reviewed. The database report was compiled by a third-party database provider and is reportedly the most recent database information available from each agency. A copy of the database report is included in the appendix. According to the database provider, their search of the various databases conforms to ASTM E1527-2013 Standards. However, the accuracy of the information provided by the agencies is not without error or omission, and the information listed is limited to that which was reported to or gathered by that agency. A limited discussion of the number of sites identified, and of their potential impact to the subject property, follows this page. In addition, E-S may request state and/or local regulatory agency information for the subject property, targeting those agencies most likely to provide information useful for this Assessment. The primary databases reviewed, and their general search range criteria are below:

Federal Database	**Search Range**
USEPA NPL/Superfund databases:	Target Property to 1.0 mile
USEPA CERCLIS databases:	Target Property to 0.5 mile
USEPA RCRIS facilities databases	
Corrective Action Sites:	1.0 mile
TSD Facilities:	0.5 mile
Generators:	0.25 mile
USEPA ERNS database:	Target Property
US Engineering Controls:	0.5 mile
US Institutional Controls:	0.5 mile
US DOD/FUDS databases:	1.0 mile
US Brownfields:	0.5 mile
State/Local Database	**Search Range**
State Superfund databases:	
Hist Cal-Sites:	1.0 mile
CA Bond Exp. Plan	1.0 mile
State Landfills database:	0.5 mile
State Cortese	0.5 mile
State/Local LUST databases:	0.5 mile
State Spills databases:	
SLIC:	0.5 mile
CHMIRS:	Target Property
State/Local UST/AST databases:	0.25 mile
State Liens database:	Target Property
State Deed database:	0.5 mile
State VCP database:	0.5 mile
State EnviroStor/Response databases:	1.0 mile
State HAZNET database:	Target Property
Local Haz-Mat/Cleanup databases:	Target Property

A. REVIEW OF FEDERALLY REPORTED ENVIRONMENTAL DATA

The review of the federal environmental databases listed below attempts to identify environmental problem sites, activities, and occurrences from the records of the U.S. Environmental Protection Agency (USEPA). The detailed listing, and a map showing the location of the sites relative to the subject property, is included in the appendix.

National Priorities List (NPL) of Superfund Sites:
The NPL is the USEPA's database of hazardous waste sites currently identified and targeted for priority cleanup action under the Superfund program. This search includes Proposed NPL sites, Delisted NPL sites, and NPL Recovery sites. NPL sites may encompass relatively large areas. As such, polygon coverage for the site boundaries (for a majority of the NPL sites), as produced by the EPA may be provided. A search of the NPL database identified the following number of Superfund sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

National Priorities List Liens (NPL Liens):

The NPL Liens database contains a list of filed notices of Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. A search of the NPL Liens database identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980:
Mandated as part of the 1980 Superfund Act, the CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) list is an EPA compilation of the sites investigated, or currently being investigated, for a release or potential release of a regulated hazardous substance under the CERCLA regulations. A search of the CERCLIS and CERCLIS-NFRAP (no further remedial action planned) databases identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

RCRIS Corrective Action (RCRIS-CA) Sites:

The RCRIS-CA report contains information pertaining to hazardous waste handling facilities which have conducted, or are currently conducting corrective actions, as regulated by the Resource Conservation and Recovery Act. A search of the RCRIS-CA list identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

Resource Conservation and Recovery Act Information System (RCRIS) Treatment, Storage, and Disposal (TSD) Facilities:

The RCRA program identifies and tracks hazardous waste from generation source to the point of ultimate disposal. The RCRIS-TSD facilities database is the composite of reporting facilities that transport, store, or dispose of controlled or hazardous waste. Identification on this list does not indicate that a site has impacted the environment. A search of the RCRIS-TSD database identified the following number of facilities within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

RCRIS Generator Facilities:

The RCRIS program identifies and tracks hazardous waste from generation source to the point of ultimate disposal. The RCRIS generator facilities database (large and small quantity generators and various derivations) is the composite of reporting facilities that generate hazardous waste. Identification on these lists does not indicate that a site has impacted the environment. A search of the RCRIS facilities databases identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
One	None

Emergency Response Notification System (ERNS):

The ERNS database is the historical record of releases of hazardous substances reported to the USEPA. A search of the ERNS database identified the following number of releases within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

EPA Engineering and Institutional Controls (US ENG/INST CONTROL) Sites:

These databases include listings of sites with engineering or institutional controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are required as part of the institutional controls. A search of the US ENG/INST CONTROL database(s) identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

Department of Defense (DOD) Sites:

The Unites States Geological Survey (USGS) maintains the DOD database, which consists of federally owned or administered lands, administered by the DOD, that have an area equal to or greater than 640 acres of the United States, Puerto Rico, and the US Virgin Islands. A search of the DOD database identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

Formerly Used Defense Sites (FUDS):

The U.S. Army Corps of Engineers database contains a listing of locations of Formerly Used Defense Sites (FUDS) where the U.S. Army Corps of Engineers is actively working or will take necessary cleanup actions. A search of the FUDS database identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

US Brownfields Sites (Brownfields):

The US Brownfields site includes brownfields properties addressed by Cooperative Agreement Recipients (CAR) and brownfields properties addressed by Targeted Brownfields Assessments (TBA). EPA's TBA program is designed to help states, tribes, and municipalities minimize the uncertainties of contamination often associated with brownfields. Cooperative Agreement Recipients (states, political subdivisions, territories, and Indian tribes) become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the USEPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities. A search of the Brownfields database identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

CERCLA Lien Information (LIENS 2):

A Federal Superfund Lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties. A search of the LEINS 2 database identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

Facility Index System (FINDS) sites:

The FINDS Report is a computerized inventory of all facilities that are regulated or tracked by the U.S. Environmental Protection Agency. These facilities are assigned a unique identification number that serves as a cross-reference for databases in the EPA's program system. Identification on this database does not indicate that a site has impacted the environment. A search of the FINDS database identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

B. REVIEW OF STATE-REPORTED ENVIRONMENTAL DATA

Results of the state regulatory records search follow. Each section begins with a general description of the databases searched and the corresponding responsible state or local agency. The detailed listing, and a map showing the location of the sites relative to the subject property, is included in the appendix.

State Hazardous Waste Site (SHWS) Databases:

State Hazardous Waste Site records are the states' equivalent to CERCLIS. The Department of Toxic Substances Control (DTSC) Hist Cal-Sites database contains potential or confirmed hazardous substance release properties. The Calsites database was created by the Department of Toxic Substances and Control (DTSC), but DTSC no longer up-dates the Calsites database. The Calsites database was replaced by the EnviroStor database (see EnviroStor section below). The CA Bond Expenditure Plan database contains the Department of Health Services site-specific expenditure plan, which is the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. A search of the State Hazardous Waste Site database(s) identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

Solid Waste Facilities, Landfills and Recycling Facilities:

The State Solid Waste Facilities and Landfills and Recycling databases include an inventory of active, closed, and inactive solid waste disposal facilities, landfills, refuse transfer stations, and recycling facilities (non-landfill sites). A search of these databases identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
One	None

Historical Cortese Database:

The Historical Cortese list contains hazardous waste and substance sites compiled pursuant to Assembly Bill 3750 (Cortese, Chapter 1048, Statutes of 1986). The information included in this list was compiled with information from the California DTSC, the State Water Resources Control Board, and the California Waste Management Board. This database contains primarily LUST sites, although other types of sites may be included. A search of the Cortese database identified the following number of sites within the specified search range:

Number of Sites	Number Listed at Subject Property
One	None

Leaking Underground Storage Tanks (LUSTs):

State and/or local agencies maintain inventories of LUSTs (also known as LTANKS) in a statewide database. A search of the LUST database identified the following number of reported LUST sites within the specified search range:

Number of Sites	Number Listed at Subject Property
Two	None

State/Local Spills Databases:

The Spills, Leaks, Investigations, and Cleanup (SLIC) Cost Recovery Listing program is designed to protect and restore water quality from spills, leaks, and similar discharges. The database(s) included in this section are the states' equivalent to the ERNS report and generally contain information for reported hazardous material/waste surface or groundwater contamination release investigations reported in that state or locality. The California Hazardous

Material Incident Report System (CHMIRS) database contains information on reported hazardous waste material incidents (accidental releases or spills). A search of these databases identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

Underground Storage Tanks (USTs)/Aboveground Storage Tanks (ASTs):

USTs are regulated under Subtitle I of the RCRA (as well as various state regulations), and must be registered with the State Underground Storage Tank Program. These are registered USTs only, and identification on this list(s) does not necessarily indicate that the site has impacted the environment. This search includes review of the Active UST Facilities (UST) database, Facility Inventory Database (CA FID UST), Hazardous Substance Storage Container Database (HIST UST), and SWEEPS UST Listing database (SWEEPS UST). Also potentially included in this section are sites identified on historic UST databases that are no longer maintained. The AST database is the State Water Resources Control Board's Hazardous Substance Storage Container Database for registered ASTs. A search of these UST and AST databases identified the following number of sites within the specified search range:

Number of Sites	Number Listed at Subject Property
None	None

Environmental Liens Listing (LIENS):

The Department of Toxic Substances Control's (DTSC) LIENS database includes a listing of property locations with environmental liens for California where DTSC is a lien holder. A search of the LIENS database identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

Deed Restriction Listing (DEED):

The Department of Toxic Substances Control's (DTSC) DEED database includes a listing of Site Mitigation and Brownfields Reuse Program (SMBRP) Facility Sites with Deed Restrictions and Hazardous Waste Management Program Facility Sites with Deed/Land Use Restrictions. The SMBRP list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active, and some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners. A search of the DEED database identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

Voluntary Cleanup Program (VCP):

The Department of Toxic Substances Control's (DTSC) VCP database contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have requested that DTSC oversee the investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs. A search of the VCP database identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

State Response/EnviroStor Databases:

The Department of Toxic Substances Control's (DTSC) RESPONSE database identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk. The DTSC's Site Mitigation and Brownfields Reuse Program's (SMBRPs) EnviroStor database identifies sites that have reported contamination or sites for which there may be reason to investigate

further. The database includes the following site types: Federal Superfund Sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in Cal-Sites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites. A search of the Response and EnviroStor databases identified the following number of sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
One	None

State and/or Local Agency Generators (HAZNET):

The HAZNET data is extracted from copies of hazardous waste manifests kept by the Cal-EPA, DTSC. These manifests track hazardous wastes from generation source to the point of ultimate disposal. Permit data is generally culled from local agency database(s) for hazardous material handlers and generators. Identification on these lists does not indicate that a site has impacted the environment and the data has not always been verified for accuracy by the DTSC or local agencies. A search of the HAZNET and Permit data identified the following number of reported sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

National Pollutant Discharge Elimination System (NPDES) Database:

The National Pollutant Discharge Elimination System (NPDES) includes sites that have had or have a permit for the discharge of wastewater or stormwater issued by the Regional Water Quality Control Board or a local agency (e.g., Public Works Department). The NPDES data identified the following number of reported sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

State and/or Local Agency Air Emissions Database (EMI):

The EMI data is extracted from permits for air emissions kept by the state or local air resources agency. Identification on these lists does not indicate that a site has impacted the environment. A search of the EMI database identified the following number of reported sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

Notify 65 Database:

Notify 65 listings generally indicate that some type of release and/or groundwater impact have occurred which was required to be reported under Proposition 65 rules. A search of the Notify 65 data identified the following number of reported sites within the specified database search range:

Number of Sites	Number Listed at Subject Property
None	None

EDR Historical Auto Stations, Historical Cleaners, & Manufactured Gas Plants Databases:

These databases include former gas stations, auto repair shops, dry cleaners, Laundromats, and manufactured gas plants that are typically no longer active. Identification on these databases does not necessarily indicate that such activities actually occurred at that site or that a site has impacted the environment. A search of these databases identified the following number of sites within the specified database search range:

Type of Site	Number of Sites	Number Listed at Subject Property
Historical Auto Stations	None	None
Historical Cleaners	None	None
Historical Manufactured Gas	None	None

Orphan Unplottable Sites:
"Orphan" sites are those which could not be plotted by the database provider using conventional geo-coding methods, typically because the information provided in the original government database was unclear, incorrect or missing. A listing of orphan sites (if any) appears at the end of the database, immediately after the last plottable site description.

E-S reviewed the orphan list for sites with the same name as the subject property (if applicable) and/or the same or similar property address. This review is inherently limited by the incomplete and/or possibly incorrect data reported in the orphan listings. For orphans apparently not related to the subject property, only those obviously located adjoining or within a short distance that may affect the property are discussed. Orphan sites which are also listed in the plotted section are not re-discussed. E-S's review of the orphan list revealed no obvious sites of concern listed at or adjoining the subject property.

Mapped Database Sites:
A review of the state and federal government agencies list, as provided by EDR, and dated 09/17/2019 has revealed that there are two LUST sites, on Historical Cortese site and one SWRCY site within .5 miles of the target property.

Elsinore Valley Muni, 33751 Mission Trail (LUST) SSE 1/8 – 1/4 (0.136 mi.)
Three Sites with this address.
Facility Id: 911100
Status: Cased closed

Tosco Circe K, 33982 Mission Trail (LUST) SSE 1/8 – 1/4 (0.450 mi.)
Two Sites with this address
Facility Id: T0606500523
Status: Cased closed

Peralta Enterprises 31949 Corydon Street (SWRCY) SSW 1/4 -1/2 (0.380 mi)
Facility Id: RC246836.001
Status: No violations.

E-S does not feel that any of these pose a REC based on the distance and the Status of each.

C. LOCAL AGENCY RECORDS SEARCH

The following is a discussion of the results of E-S's written records requests, online regulatory database review, and/or personal/telephone contacts (as applicable) made to state and/or local government agencies in an effort to obtain potential information relevant to the subject property:

County of Riverside Environmental Department:

E-S contacted the County of Riverside Environmental Health in an effort to evaluate whether hazardous material incidents, USTs, and/or LUSTs have been reported at the subject property. Because the property does not have a physical address the County of Riverside Environmental Department, had no incidents that were known to them.

California State Water Board:

E-S also reviewed the State Water Boards online database (Geotracker) in an effort to identify potentially hazardous waste generation/disposal activities associated with the subject property address. A search radius was performed, and no sites were identified within .5 miles of the Site, and can be found in Appendix D.

California Department of Water Resources:

E-S contacted the California Department of Water Resources in an effort to evaluate whether any state listed water wells or water resources are located on the subject property address. No water wells are located on the property.

D. TRIBAL RECORDS SEARCH

According ASTM E1527-2013, records for local and tribal records shall be checked to satisfy all appropriate inquiry for this assessment. The following is a discussion of the results of E-S's written records requests, online regulatory database review, and/or personal/telephone contacts (as applicable) made to tribal governmental agencies in an effort to obtain potential information relevant to the subject property:
The subject property is not located on tribal property and therefore no inquiry was necessary.

SECTION VI.
SITE VISIT OBSERVATIONS

A. SITE STRUCTURE CHARACTERISTICS

At the time of the site visit, the subject property consisted of one vacant undeveloped parcel of land, totaling approximately 6 Acres. No pesticides, sumps, clarifiers, swales, or surface impoundments potentially containing hazardous materials were observed on the subject property. Weather conditions at the time of the site visit consisted of cloudy skies, with temperatures in the 90's.

B. WASTEWATER AND STORMWATER MANAGEMENT

No wastewater was observed at the subject site.

Storm water and surface run-off from the subject property and adjacent properties inter the natural storm water and flood control conveyance systems.

C. POTABLE WATER SUPPLY

The subject property would utilize water from Eastern Municipal Water District.

E. BUSINESS OPERATIONS DESCRIPTION

According to the Riverside County Department of Planning, the subject property zone is not designated. E-S's research indicates no dry cleaners, gasoline stations, military bases, or major manufacturing operations have occupied the subject property.

SECTION VII.
HAZARDOUS MATERIAL/WASTE OBSERVATIONS

A. HAZARDOUS MATERIALS HANDLING AND STORAGE

No hazardous materials were observed at the subject property. No significant staining or spillage was observed in any of the areas inspected. No other significant hazardous materials handling, or storage were observed on the subject property during the site visit.

B. WASTESTREAM GENERATION, STORAGE AND DISPOSAL

During the inspection, no hazardous waste generation, storage, or improper hazardous waste disposal was observed on the subject property. Stained or discolored sinks, drains, catch basins, drip pads, or sumps were not observed. Additionally, significant spills or staining were not observed at the subject property.

C. SOLID WASTE DISPOSAL

During the inspection, no solid waste generation, storage, or improper solid waste disposal was observed on the subject property.

D. ABOVEGROUND STORAGE TANKS (ASTs)

Visual or physical indicators of current or former ASTs were not observed at the subject property during the site visit.

E. UNDERGROUND STORAGE TANKS (USTs)

As discussed in the Section V (Agency Records Review) of this report, no USTs were reported at the subject property. In addition, no visual or physical evidence of current or past USTs were discovered during the site visit in the readily visible areas of the property. In particular, E-S searched for: fill pipes, vent pipes, man-ways, manholes, access covers, and or concrete pads not homogeneous with surrounding surfaces, concrete built-up areas potentially indicating pump islands, abandoned pumping equipment, or fuel pumps.

SECTION VIII.
OTHER POTENTIAL ISSUES OF CONCERN

A. PCB-CONTAINING EXTERIOR ELECTRICAL TRANSFORMERS

No transformers were observed on the subject property.

B. OTHER PCB-CONTAINING INTERIOR OR EXTERIOR EQUIPMENT

During the on-site inspection, no evidence was observed of any equipment likely containing PCB-contaminated fluid (e.g., interior electric transformers, hydraulic elevators, hydraulic hoists/lifts, hydraulic loading dock ramps, other fluid containing equipment, etc.).

C. SUSPECT ASBESTOS-CONTAINING MATERIALS (ACMs)

No structures are present on the property, and asbestos-containing materials (ACMs) identification are beyond the scope of this assessment.

D. LEAD-BASED PAINT (LBP)

No structures are present on the property, and lead-based paint (LBP) identification are beyond the scope of this assessment.

E. LEAD IN DRINKING WATER

Federal regulations limit lead in publicly supplied water to no more than 15 parts per billion (ppb), however, the most common source of lead in tap water is from interior plumbing systems (piping, connections, faucets, etc.). Children are the most susceptible to possible health effects from consuming lead-tainted drinking water. Due to the nature of the property being undeveloped, no observations of these sources were observed. The presence or absence of elevated lead concentrations in the water can only be confirmed through laboratory testing, and such analysis is beyond the scope of this assessment.

F. AIR QUALITY

Unusual smells, noxious odors, or visual emissions were not observed during the inspection of the subject property. However, these observations are general in nature and should not be construed as an air quality assessment.

G. RADON

According to the USEPA, the general area of the site has a predicted average indoor screening level of less than the EPA guideline action level of 4.0 picoCuries per liter of air (EPA Radon Zone Level of 1). Therefore, based upon the reported subsurface characteristics of the area, the subject property exhibits no potential for high-level radon exposure.

H. RAILROAD RIGHTS-OF-WAY

There are several potential environmental risks associated with railroad rights-of-way, including the usage of herbicides, pesticides, petroleum materials and related heavy metals (e.g. arsenic) to maintain the tracks, as well as the potential spillage of hazardous materials from railcars. During the site visit, no railroad rights-of-way, spurs, or related features were observed immediately adjoining the subject property.

SECTION IX.
ADJOINING PROPERTY OBSERVATIONS

As discussed below, based upon limited observations of the adjoining properties from publicly accessible locations, as well as a review of federal, state, and local environmental databases, none of the adjoining properties appeared to have significantly environmentally impacted the subject property at this time.

A. ADJOINING PROPERTIES MATERIALS STORAGE

Visual observations of the portions of the adjoining properties visible from the subject property or public roadways did not indicate the exterior storage of hazardous materials or wastes. No indications of spillage or staining were observed in the observable exterior areas of these sites. Additionally, no obvious indications of improper hazardous material storage or unusual or suspicious materials handling, or storage practices were observed.

B. ADJOINING PROPERTIES WASTESTREAM DISPOSAL

No unusual or suspicious waste stream disposal activities were observed on the portions of the adjoining properties visible from the subject property or public roadways.

C. RECOMMENDATIONS

Based on the results of this Phase I, no further investigation is recommended for this Site.

SECTION X.
STATEMENT OF THE ENVIRONMENTAL PROFESSIONALS

This Assessment has been performed for the exclusive use and benefit of the addressee(s) identified on the cover of this report, or agents directly specified by it (them), for the transaction at issue concerning the subject property described in this report. This Assessment shall not be used or relied upon by others without the prior written consent of Earth-Strata, Inc. and of the addressee(s) named on the cover of this report.

STATEMENT OF QUALITY ASSURANCE

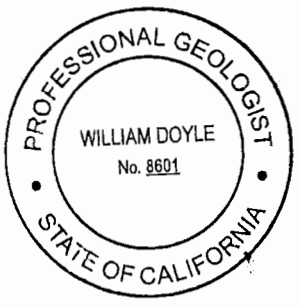
I declare that, to the best of my professional knowledge and belief, I meet the definition of an Environmental Professional as defined in § 312.10 of 40 CFR 312 and 12.13.2. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. The conclusions contained within this Assessment are based upon site conditions I readily observed and were reasonably ascertainable and present at the time of the site visit. The findings and conclusions represent my best professional opinion and judgment. In addition, the conclusions and recommendations stated in this report are based upon personal observations made by E-S and upon information provided by others. I have no reason to suspect or believe that the information provided is inaccurate.

STATEMENT OF QUALITY CONTROL

The objective of this Phase I ESA was to ascertain the potential presence or absence of RECs that could impact the subject property, as delineated in the scope of services and limitations identified in this report and in the service agreement. The procedure was to perform reasonable steps in accordance with the existing regulations, currently available technology, and generally accepted environmental consulting practices, in order to accomplish the stated objective.

Signature of Professional Geologist – *William T. Doyle, #8601*

Signature/Environmental Assessor



Acronyms and Abbreviations

Below are several abbreviations that E-S uses to describe various projects.

ACM	Asbestos-containing material
AQMD	Air Quality Management District
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
bgs	Below Ground Surface
BTEX	Benzene-toluene-ethylbenzene-xylene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
CHMIRS	California Hazardous Material Incident Report System
COC's	Chemicals of Concern
CDL	Clandestine Drug Labs
DEP	Department of Environmental Protection
DOD	Department of Defense
DOE	Department of Energy
DTSC	Department of Toxic Substance Control
EDR	Environmental Data Resources, Inc.
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FINDS	Facility Index System
FUDS	Formerly Used Defense Sites
HMIRS	Hazardous Materials Information Reporting System
ICIS	Integrated Compliance Information System
LBP	Lead Based Paint
LDL	Laboratory Detection Limit
LEL	Lower Explosion Limit
LUCIS	Land Use Control Information System
LUST	leaking underground storage tank
MCL	Maximum Contaminant Level
MLTS	Material License Tracking System
mg/L	Milligrams per liter
MSDS	Material Safety Data Sheet
MTBE	Methyl Tertiary Butyl Ether
NFA	No Further Action
NPL	National Priority List
ODI	Open Dump Inventory
PADS	PCB Activity Database System
PCB	Poly Chlorinated Biphenyl
PEL	Permissible Exposure Limit
Ppb	Parts per billion
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
REC	Recognized environmental condition
RWQCB	Regional Water Quality Control Board
SVE	Soil Vapor Extraction
Ug/L	Micrograms per Liter
UST	Underground storage tank
VOC	Volatile Organic Compound

APPENDIX

A


Widomar Rd
Victorian Ln
Mission Trail
Lewis St
Apricot Ln
Lemon St
Jaro Dr
Valencia St
Orchard St
Cereal St
Subject Site
© 2018 Google
Google Earth
1994
33°38'07.67" N 117°17'27.80" W elev 1283 ft eye alt 5173 ft

SITE PHOTOS

APN 370-050-026 , LAKE ELSINORE, CALIFORNIA



View from Corydon Road, southwest corner of property looking west at Aerofoam Industries.



View from Corydon Road, southwest corner of property looking northwest at flood control channel.



View from Corydon Road, southwest corner of property looking northwest at property line adjacent to flood control channel.



View from Corydon Road, southwest corner of property looking northeast toward corner of Corydon Road and Mission Trail.



View from northwest corner of property looking south at Aerofoam Industries and flood control channel.



View from northwest corner of property looking northeast toward Mission Trail, abandoned dirt bike track to the left of photo.



View from northwest corner of property looking east toward Mission Trial.



View from northwest corner of property looking southeast toward Mission Trial and intersection of Corydon Road.



View from northeast corner of property looking south toward Mission Trial and intersection of Corydon Road.



View from northeast corner of property looking southwest toward Aerofoam Industries and flood control channel.

APPENDIX

B

R.E.D. Corydon LLC

Not Reported

Lake Elsinore, CA 92530

Inquiry Number: 5792354.5

September 17, 2019

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

09/17/19

Site Name:

R.E.D. Corydon LLC
Not Reported
Lake Elsinore, CA 92530
EDR Inquiry # 5792354.5

Client Name:

Rainwater Consulting
24051 Golden Pheasant Lane
Murrieta, CA 92562
Contact: Tim Doyle

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1990	1"=500'	Flight Date: September 06, 1990	USDA
1989	1"=500'	Flight Date: August 15, 1989	USDA
1985	1"=500'	Flight Date: February 24, 1985	USDA
1978	1"=500'	Flight Date: September 20, 1978	USDA
1974	1"=500'	Flight Date: November 06, 1974	USGS
1967	1"=500'	Flight Date: May 15, 1967	USDA
1961	1"=500'	Flight Date: June 14, 1961	USDA
1953	1"=500'	Flight Date: September 22, 1953	USDA
1949	1"=500'	Flight Date: May 06, 1949	USDA
1938	1"=500'	Flight Date: June 14, 1938	USDA

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INQUIRY #: 5792354.5

YEAR: 2016

= 500'

N

EDR



INQUIRY #: 5792354.5

YEAR: 2012

= 500'

N

EDR



INQUIRY #: 5792354.5

YEAR: 2009

= 500'

N

EDR


INQUIRY #: 5792354.5
YEAR: 2005
= 500'
N
EDR



INQUIRY #: 5792354.5

YEAR: 1994

= 500'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.



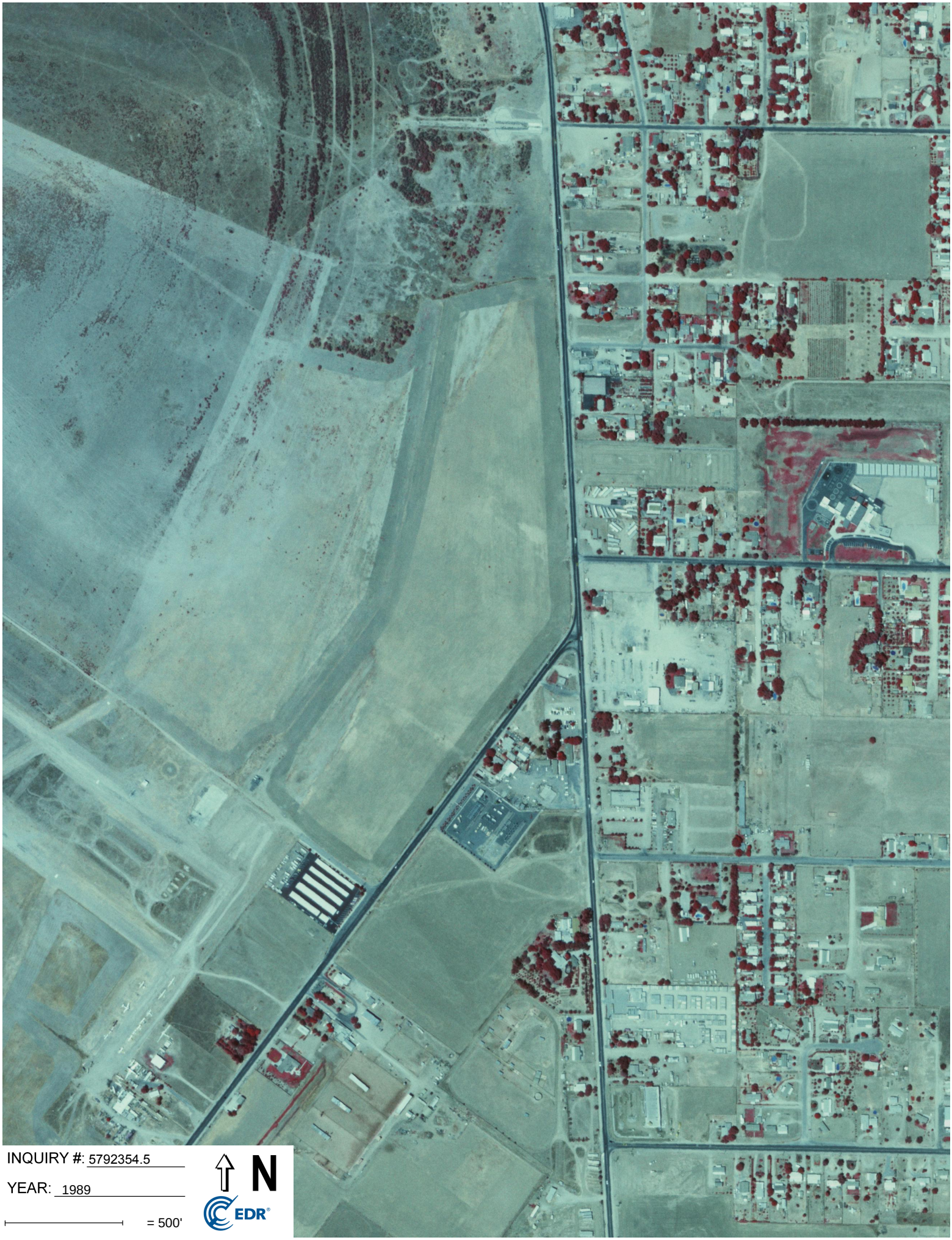
INQUIRY #: 5792354.5

YEAR: 1990

= 500'

N

EDR


INQUIRY #: 5792354.5
YEAR: 1989
= 500'
N
EDR


INQUIRY #: 5792354.5
YEAR: 1985
= 500'
N
EDR



INQUIRY #: 5792354.5

YEAR: 1978

= 500'

N

EDR



INQUIRY #: 5792354.5

YEAR: 1974

= 500'

N

EDR



INQUIRY #: 5792354.5

YEAR: 1967

= 500'

N

EDR



INQUIRY #: 5792354.5

YEAR: 1961

= 500'

N

EDR



INQUIRY #: 5792354.5

YEAR: 1953

= 500'

N

EDR



INQUIRY #: 5792354.5

YEAR: 1949

= 500'

N

EDR



INQUIRY #: 5792354.5

YEAR: 1938

= 500'

N

EDR

APPENDIX

C

R.E.D. Corydon LLC
Not Reported
Lake Elsinore, CA 92530

Inquiry Number: 5792354.2s
September 17, 2019

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

NOT REPORTED
LAKE ELSINORE, CA 92530

COORDINATES

Latitude (North):	33.6335850 - 33° 38' 0.90''
Longitude (West):	117.2917570 - 117° 17' 30.32''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	472941.1
UTM Y (Meters):	3721374.8
Elevation:	1275 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5636473 LAKE ELSINORE, CA
Version Date:	2012
South Map:	5636487 WILDOMAR, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140527, 20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
NOT REPORTED
LAKE ELSINORE, CA 92530

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	ELSINORE VALLEY MWD	33751 MISSION TRAIL	LUST, HIST CORTESE	Higher	717, 0.136, SSE
A2	ELSINORE VALLEY MUNI	33751 MISSION TRL	LUST, SWEEPS UST, HIST UST, CA FID UST	Higher	717, 0.136, SSE
B3	BEST DEAL AUTOMOTIVE	31881 CORYDON ST STE	RCRA NonGen / NLR	Lower	766, 0.145, SSW
B4	STREAMLINE TRANSMISS	31881 CORYDON ST 150	CERS HAZ WASTE	Lower	766, 0.145, SSW
B5	MK MOTORSPORTS INC	31881 CORYDON ST STE	RCRA NonGen / NLR	Lower	766, 0.145, SSW
B6	STREAMLINE TRANSMISS	31881 CORYDON ST STE	RCRA NonGen / NLR	Lower	766, 0.145, SSW
C7	LAKE EISINORE MATERI	33600 MISSION TRAIL	CERS HAZ WASTE, HAZNET, CERS	Higher	814, 0.154, ESE
C8	SUNBELT RENTALS INC	33600 MISSION TRAIL	RCRA NonGen / NLR	Higher	814, 0.154, ESE
9	ELSINORE VALLEY MUNI	33751 MISSION TRAIL	LUST, CERS	Higher	937, 0.177, SSE
10	GERSTNER PRECISION	31883 CORYDON STREET	RCRA-VSQG	Lower	937, 0.177, SSW
11	TACTICAL TECHNOLOGIE	31877 CORYDON ST #14	CERS HAZ WASTE	Higher	1069, 0.202, SSW
D12	CBR PERFORMANCE PROD	31887 CORYDON ST STE	RCRA NonGen / NLR	Lower	1122, 0.213, SSW
D13	SO CAL VETTES & HOT	31889 CORYDON ST STE	RCRA NonGen / NLR	Lower	1223, 0.232, SSW
E14	SEDCO PIERS INC	33320 MISSION TR	CERS HAZ WASTE, CERS	Higher	1262, 0.239, NNE
E15	SEDCO PIER INC	33320 MISSION TRL	RCRA NonGen / NLR	Higher	1262, 0.239, NNE
16	CIRCLE K #5093	33982 MISSION TRL	SWEEPS UST, CA FID UST, HIST CORTESE	Higher	1601, 0.303, SSE
17	PERALTA ENTERPRISES	31949 CORYDON RD UNI	SWRCY, HAZNET, NPDES, CIWQS, CERS	Lower	2005, 0.380, SSW
F18	TOSCO/ CIRCLE K STOR	33982 MISSION TRAIL	LUST	Higher	2375, 0.450, SSE
F19	TOSCO/ CIRCLE K STOR	33982 MISSION TRAIL	LUST, CERS	Higher	2375, 0.450, SSE
20	ELSINORE HIGH SCHOOL	BUNDY CANYON ROAD/OR	ENVIROSTOR, SCH	Higher	3783, 0.716, SE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

EXECUTIVE SUMMARY

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ---------- State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ---------- Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ---------- Underground Storage Tank Listing
UST ---------- Active UST Facilities
AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP ---------- Voluntary Cleanup Program Properties
INDIAN VCP ---------- Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ---------- Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ---------- Waste Management Unit Database
HAULERS ---------- Registered Waste Tire Haulers Listing
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---------- Open Dump Inventory
IHS OPEN DUMPS ---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---------- Delisted National Clandestine Laboratory Register
HIST Cal-Sites ---------- Historical Calsites Database
SCH ---------- School Property Evaluation Program

CDL	Clandestine Drug Labs
Toxic Pits	Toxic Pits Cleanup Act Sites
US CDL	National Clandestine Laboratory Register
PFAS	PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

CERS TANKS	California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS	Environmental Liens Listing
LIENS 2	CERCLA Lien Information
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem

US MINES - Mines Master Index File
ABANDONED MINES - Abandoned Mines
FINDS - Facility Index System/Facility Registry System
DOCKET HWC - Hazardous Waste Compliance Docket Listing
UXO - Unexploded Ordnance Sites
ECHO - Enforcement & Compliance History Information
FUELS PROGRAM - EPA Fuels Program Registered Listing
CA BOND EXP. PLAN - Bond Expenditure Plan
Cortese - "Cortese" Hazardous Waste & Substances Sites List
CUPA Listings - CUPA Resources List
DRYCLEANERS - Cleaner Facilities
EMI - Emissions Inventory Data
ENF - Enforcement Action Listing
Financial Assurance - Financial Assurance Information Listing
HAZNET - Facility and Manifest Data
ICE - ICE
HWP - EnviroStor Permitted Facilities Listing
HWT - Registered Hazardous Waste Transporter Database
MINES - Mines Site Location Listing
MWMP - Medical Waste Management Program Listing
NPDES - NPDES Permits Listing
PEST LIC - Pesticide Regulation Licenses Listing
PROC - Certified Processors Database
Notify 65 - Proposition 65 Records
UIC - UIC Listing
UIC GEO - UIC GEO (GEOTRACKER)
WASTEWATER PITS - Oil Wastewater Pits Listing
WDS - Waste Discharge System
WIP - Well Investigation Program Case List
MILITARY PRIV SITES - MILITARY PRIV SITES (GEOTRACKER)
PROJECT - PROJECT (GEOTRACKER)
WDR - Waste Discharge Requirements Listing
CIWQS - California Integrated Water Quality System
CERS - CERS
NON-CASE INFO - NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS - OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS - PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT - SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ - Well Stimulation Project (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP - EDR Proprietary Manufactured Gas Plants
EDR Hist Auto - EDR Exclusive Historical Auto Stations
EDR Hist Cleaner - EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF - Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

RGA LUST---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-VSQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-VSQG list, as provided by EDR, and dated 03/25/2019 has revealed that there is 1 RCRA-VSQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
GERSTNER PRECISION EPA ID:: CAR000289199	31883 CORYDON STREET	SSW 1/8 - 1/4 (0.177 mi.)	10	25

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 04/29/2019 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ELSINORE HIGH SCHOOL	***BUNDY CANYON ROAD/OR***	***SE 1/2 - 1 (0.716 mi.)***	***20***	***48***

Facility Id: 33010015
Status: No Further Action

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 5 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ELSINORE VALLEY MWD	***33751 MISSION TRAIL***	***SSE 1/8 - 1/4 (0.136 mi.)***	***A1***	***8***
Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global ID: T0606500259				
ELSINORE VALLEY MUNI	***33751 MISSION TRL***	***SSE 1/8 - 1/4 (0.136 mi.)***	***A2***	***9***
Database: RIVERSIDE CO. LUST, Date of Government Version: 04/11/2019 Facility Id: 911100 Facility Status: 9				
ELSINORE VALLEY MUNI	***33751 MISSION TRAIL***	***SSE 1/8 - 1/4 (0.177 mi.)***	***9***	***23***
Database: LUST, Date of Government Version: 06/10/2019 Status: Completed - Case Closed Global Id: T0606500259				
TOSCO/ CIRCLE K STOR	33982 MISSION TRAIL	SSE 1/4 - 1/2 (0.450 mi.)	F18	44
Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global ID: T0606500523				
TOSCO/ CIRCLE K STOR	***33982 MISSION TRAIL***	***SSE 1/4 - 1/2 (0.450 mi.)***	***F19***	***46***
Database: RIVERSIDE CO. LUST, Date of Government Version: 04/11/2019 Database: LUST, Date of Government Version: 06/10/2019 Status: Completed - Case Closed Facility Id: 980287 Global Id: T0606500523 Facility Status: 9				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: A listing of recycling facilities in California.

A review of the SWRCY list, as provided by EDR, and dated 06/11/2019 has revealed that there is 1 SWRCY site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PERALTA ENTERPRISES	***31949 CORYDON RD UNI***	***SSW 1/4 - 1/2 (0.380 mi.)***	***17***	***36***

EXECUTIVE SUMMARY

Cert Id: RC246836.001

Local Lists of Hazardous waste / Contaminated Sites

CERS HAZ WASTE: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 08/14/2019 has revealed that there are 4 CERS HAZ WASTE sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LAKE EISINORE MATERI	***33600 MISSION TRAIL***	***ESE 1/8 - 1/4 (0.154 mi.)***	***C7***	***17***
TACTICAL TECHNOLOGIE	31877 CORYDON ST #14	SSW 1/8 - 1/4 (0.202 mi.)	11	27
SEDCO PIERS INC	***33320 MISSION TR***	***NNE 1/8 - 1/4 (0.239 mi.)***	***E14***	***31***

Lower Elevation	Address	Direction / Distance	Map ID	Page
STREAMLINE TRANSMISS	31881 CORYDON ST 150	SSW 1/8 - 1/4 (0.145 mi.)	B4	13

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there is 1 SWEEPS UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ELSINORE VALLEY MUNI	***33751 MISSION TRL***	***SSE 1/8 - 1/4 (0.136 mi.)***	***A2***	***9***
Status: A				
Tank Status: A				
Comp Number: 38805				

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ELSINORE VALLEY MUNI	***33751 MISSION TRL***	***SSE 1/8 - 1/4 (0.136 mi.)***	***A2***	***9***
Facility Id: 00000038805				

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there is 1 CA FID UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ELSINORE VALLEY MUNI Facility Id: 33007020 Status: A	***33751 MISSION TRL***	***SSE 1/8 - 1/4 (0.136 mi.)***	***A2***	***9***

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/25/2019 has revealed that there are 7 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SUNBELT RENTALS INC EPA ID:: CAL000427259	33600 MISSION TRAIL	ESE 1/8 - 1/4 (0.154 mi.)	C8	21
SEDCO PIER INC EPA ID:: CAL000369143	33320 MISSION TRL	NNE 1/8 - 1/4 (0.239 mi.)	E15	33

Lower Elevation	Address	Direction / Distance	Map ID	Page
BEST DEAL AUTOMOTIVE EPA ID:: CAL000438934	31881 CORYDON ST STE	SSW 1/8 - 1/4 (0.145 mi.)	B3	12
MK MOTORSPORTS INC EPA ID:: CAL000431594	31881 CORYDON ST STE	SSW 1/8 - 1/4 (0.145 mi.)	B5	15
STREAMLINE TRANSMISS EPA ID:: CAL000342955	31881 CORYDON ST STE	SSW 1/8 - 1/4 (0.145 mi.)	B6	16
CBR PERFORMANCE PROD EPA ID:: CAL000407173	31887 CORYDON ST STE	SSW 1/8 - 1/4 (0.213 mi.)	D12	28
SO CAL VETTES & HOT EPA ID:: CAL000388433	31889 CORYDON ST STE	SSW 1/8 - 1/4 (0.232 mi.)	D13	30

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 2 HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ELSINORE VALLEY MWD	***33751 MISSION TRAIL***	***SSE 1/8 - 1/4 (0.136 mi.)***	***A1***	***8***

EXECUTIVE SUMMARY

Reg Id: 083302003T				
CIRCLE K #5093	***33982 MISSION TRL***	***SSE 1/4 - 1/2 (0.303 mi.)***	***16***	***35***
Reg Id: 083303160T				

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 5792354.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

0 1/4 1/2 1 Miles

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	R.E.D. Corydon LLC	CLIENT:	Rainwater Consulting
ADDRESS:	Not Reported Lake Elsinore CA 92530	CONTACT:	Tim Doyle
		INQUIRY #:	5792354.2s
LAT/LONG:	33.633585 / 117.291757	DATE:	September 17, 2019 12:47 pm

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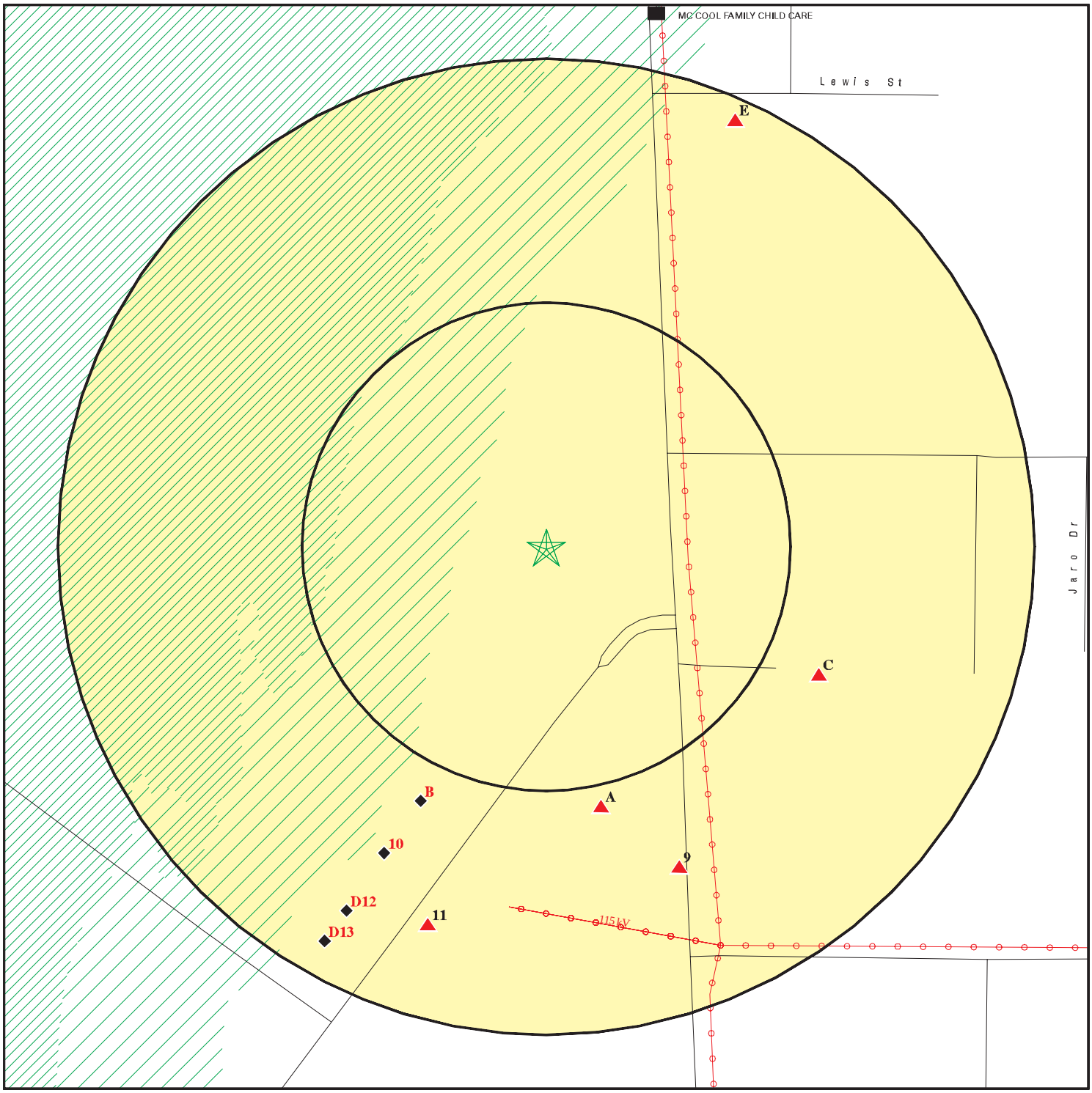
DETAIL MAP - 5792354.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: R.E.D. Corydon LLC	CLIENT: Rainwater Consulting
ADDRESS: Not Reported Lake Elsinore CA 92530	CONTACT: Tim Doyle
LAT/LONG: 33.633585 / 117.291757	INQUIRY #: 5792354.2s DATE: September 17, 2019 12:50 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	1	NR	NR	NR	1
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	1	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	3	2	NR	NR	5

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	1	NR	NR	1
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	4	NR	NR	NR	4
US CDL	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	1	NR	NR	NR	1
HIST UST	0.250		0	1	NR	NR	NR	1
CERS TANKS	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	1	NR	NR	NR	1
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	7	NR	NR	NR	7
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	1	1	NR	NR	2
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
UIC GEO	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	TP		NR	NR	NR	NR	NR	0
PROJECT	TP		NR	NR	NR	NR	NR	0
WDR	TP		NR	NR	NR	NR	NR	0
CIWQS	TP		NR	NR	NR	NR	NR	0
CERS	TP		NR	NR	NR	NR	NR	0
NON-CASE INFO	TP		NR	NR	NR	NR	NR	0
OTHER OIL GAS	TP		NR	NR	NR	NR	NR	0
PROD WATER PONDS	TP		NR	NR	NR	NR	NR	0
SAMPLING POINT	TP		NR	NR	NR	NR	NR	0
WELL STIM PROJ	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	19	4	1	0	24

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **ELSINORE VALLEY MWD** **LUST** **S102429198**
SSE **33751 MISSION TRAIL** **HIST CORTESE** **N/A**
1/8-1/4 **LAKE ELSINORE, CA 92530**
0.136 mi.
717 ft. **Site 1 of 2 in cluster A**

Relative: **Higher**
Actual: **1281 ft.**

LUST REG 8:

Name:	ELSINORE VALLEY MWD
Address:	33751 MISSION TRAIL
City:	LAKE ELSINORE
Region:	8
County:	Riverside
Regional Board:	Santa Ana Region
Facility Status:	Case Closed
Case Number:	083302003T
Local Case Num:	911100
Case Type:	Soil only
Substance:	Diesel
Qty Leaked:	Not reported
Abate Method:	Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming)
Cross Street:	Not reported
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global ID:	T0606500259
How Stopped Date:	10/28/1991
Enter Date:	1/6/1992
Date Confirmation of Leak Began:	Not reported
Date Preliminary Assessment Began:	Not reported
Discover Date:	11/11/1991
Enforcement Date:	Not reported
Close Date:	11/9/1993
Date Prelim Assessment Workplan Submitted:	1/6/1992
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	6/1/1992
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	1/6/1992
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	33.6319098
Longitude:	-117.2905601
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	0
Max MTBE Soil:	Not reported
MTBE Fuel:	0
MTBE Tested:	Not Required to be Tested.
MTBE Class:	*
Staff:	CAB
Staff Initials:	UNK

ELSINORE VALLEY MWD (Continued) **S102429198**

Lead Agency: Local Agency
Local Agency: 33000L
Hydr Basin #: ELSINORE (8-4)
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Summary: Not reported

HIST CORTESE:
edr_fname: ELSINORE VALLEY MWD
edr_fadd1: 33751 MISSION TRAIL
City,State,Zip: LAKE ELSINORE, CA 92530
Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 083302003T

A2 **ELSINORE VALLEY MUNICIPAL WATER DISTRICT** **LUST** **1000593023**
SSE **33751 MISSION TRL** **SWEEPS UST** **N/A**
1/8-1/4 **LAKE ELSINORE, CA 92330** **HIST UST**
0.136 mi. **CA FID UST**
717 ft. **Site 2 of 2 in cluster A**

Relative:
Higher

Actual:
1281 ft.

RIVERSIDE CO. LUST:
Name: ELSINORE VALLEY MUNICIPAL WATER DISTRICT
Address: 33751 MISSION TR
City,State,Zip: LAKE ELSINORE, CA
Region: RIVERSIDE
Facility ID: 911100
Employee: Jones
Site Closed: Yes
Case Type: Soil only
Facility Status: closed/action completed
Casetype Decode: Soil only is impacted
Fstatus Decode: Closed/Action completed

SWEEPS UST:
Name: ELSINORE VALLEY MUNICIPAL WATER DISTRICT
Address: 33751 MISSION TRL
City: LAKE ELSINORE
Status: Active
Comp Number: 38805
Number: 4
Board Of Equalization: 44-018227
Referral Date: 10-09-91
Action Date: 10-09-91
Created Date: 02-29-88
Owner Tank Id: 000441
SWRCB Tank Id: 33-000-038805-000001
Tank Status: A
Capacity: 4000
Active Date: 10-09-91
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 3

ELSINORE VALLEY MUNICIPAL WATER DISTRICT (Continued) **1000593023**

Name: ELSINORE VALLEY MUNICIPAL WATER DISTRICT
Address: 33751 MISSION TRL
City: LAKE ELSINORE
Status: Active
Comp Number: 38805
Number: 4
Board Of Equalization: 44-018227
Referral Date: 10-09-91
Action Date: 10-09-91
Created Date: 02-29-88
Owner Tank Id: 000441
SWRCB Tank Id: 33-000-038805-000002
Tank Status: A
Capacity: 1000
Active Date: 10-09-91
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: Not reported

Name: ELSINORE VALLEY MUNICIPAL WATER DISTRICT
Address: 33751 MISSION TRL
City: LAKE ELSINORE
Status: Active
Comp Number: 38805
Number: 4
Board Of Equalization: 44-018227
Referral Date: 10-09-91
Action Date: 10-09-91
Created Date: 02-29-88
Owner Tank Id: 000441
SWRCB Tank Id: 33-000-038805-000003
Tank Status: A
Capacity: 1000
Active Date: 10-09-91
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

HIST UST:
Name: ELSINORE VALLEY MUNICIPAL WATE
Address: 33751 MISSION TRAIL
City,State,Zip: LAKE ELSINORE, CA 92330
File Number: 0001F643
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001F643.pdf
Region: STATE
Facility ID: 00000038805
Facility Type: Gas Station
Other Type: Not reported
Contact Name: Not reported
Telephone: 7146743146
Owner Name: ELSINORE VALLEY MUNICIPAL WATE
Owner Address: 33751 MISSION TRAIL
Owner City,St,Zip: LAKE ELSINORE, CA 92330
Total Tanks: 0003

ELSINORE VALLEY MUNICIPAL WATER DISTRICT (Continued) **1000593023**

Tank Num:	001
Container Num:	I
Year Installed:	1982
Tank Capacity:	00004000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor

Tank Num:	002
Container Num:	II
Year Installed:	1970
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor

Tank Num:	003
Container Num:	III
Year Installed:	1960
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor

Click here for Geo Tracker PDF:

CA FID UST:

Facility ID:	33007020
Regulated By:	UTNKA
Regulated ID:	00038805
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	7146743146
Mail To:	Not reported
Mailing Address:	33751 MISSION TRL
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LAKE ELSINORE 92330
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

B3 **BEST DEAL AUTOMOTIVE & SMOG** **RCRA NonGen / NLR** **1024870306**
SSW **31881 CORYDON ST STE 110** **CAL000438934**
1/8-1/4 **LAKE ELSINORE, CA 92530**
0.145 mi.
766 ft. **Site 1 of 4 in cluster B**

Relative:
Lower

Actual:
1273 ft.

RCRA NonGen / NLR:

Date form received by agency:	09/11/2018
Facility name:	BEST DEAL AUTOMOTIVE & SMOG
Facility address:	31881 CORYDON ST STE 110 LAKE ELSINORE, CA 92530
EPA ID:	CAL000438934
Contact:	ROBBIE REED
Contact address:	31881 CORYDON ST STE 110 LAKE ELSINORE, CA 92530
Contact country:	Not reported
Contact telephone:	951-674-3979
Contact email:	BESTDEALAUTOLE@GMAIL.COM
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	ROBBIE REED
Owner/operator address:	31881 CORYDON ST STE 110 LAKE ELSINORE, CA 92530
Owner/operator country:	Not reported
Owner/operator telephone:	951-674-3979
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	JOSE MY=UNZO
Owner/operator address:	29662 COOL MEADOW DR MENIFEE, CA 92584
Owner/operator country:	Not reported
Owner/operator telephone:	951-674-3979
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	Yes
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

BEST DEAL AUTOMOTIVE & SMOG (Continued) **1024870306**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

B4 **STREAMLINE TRANSMISSION** **CERS HAZ WASTE** **S123538380**
SSW **31881 CORYDON ST 150** **N/A**
1/8-1/4 **LAKE ELSINORE, CA 92530**
0.145 mi.
766 ft. **Site 2 of 4 in cluster B**

Relative:
Lower

Actual:
1273 ft.

CERS HAZ WASTE:
Name: STREAMLINE TRANSMISSION
Address: 31881 CORYDON ST 150
City,State,Zip: LAKE ELSINORE, CA 92530
Site ID: 71812
CERS ID: 10327684
CERS Description: Hazardous Waste Generator

Violations:
Site ID: 71812
Site Name: Streamline Transmission
Violation Date: 11-17-2016
Citation: 40 CFR 1 262.34(d)(5)(ii) - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 262.34(d)(5)(ii)
Violation Description: Failure to post the following information next to the telephone: (A) The name and telephone number of the emergency coordinator; (B) Location of fire extinguishers and spill control material, and, if present, fire alarm; and (C) The telephone number of the fire department, unless the facility has a direct alarm.
Violation Notes: Returned to compliance on 11/17/2016.
Violation Division: Riverside County Department of Env Health
Violation Program: HW
Violation Source: CERS

Site ID: 71812
Site Name: Streamline Transmission
Violation Date: 11-17-2016
Citation: 22 CCR 12 66262.12 - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.12
Violation Description: Failure to obtain an Identification Number prior to treating, storing, disposing of, transporting or offering for transportation any hazardous waste.
Violation Notes: Returned to compliance on 01/26/2017.
Violation Division: Riverside County Department of Env Health
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Other/Unknown
Eval Date: 01-09-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported

STREAMLINE TRANSMISSION (Continued) **S123538380**

Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 07-22-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 07-22-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Down loaded photos
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-17-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Riverside Cnty Env Health
Entity Title: Not reported
Affiliation Address: 4065 County Circle Drive, Room 104
Affiliation City: Riverside
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92503
Affiliation Phone: (951) 358-5055

Affiliation Type Desc: Parent Corporation
Entity Name: Streamline Transmission
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 31881 Corydon St 150
Affiliation City: Lake Elsinore

STREAMLINE TRANSMISSION (Continued) **S123538380**

Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92530
Affiliation Phone: Not reported

B5 **MK MOTORSPORTS INC** **RCRA NonGen / NLR** **1024863057**
SSW **31881 CORYDON ST STE 160** **CAL000431594**
1/8-1/4 **LAKE ELSINORE, CA 92530**
0.145 mi.
766 ft. **Site 3 of 4 in cluster B**

Relative:
Lower

Actual:
1273 ft.

RCRA NonGen / NLR:
Date form received by agency: 10/18/2017
Facility name: MK MOTORSPORTS INC
Facility address: 31881 CORYDON ST STE 160
LAKE ELSINORE, CA 92530
EPA ID: CAL000431594
Contact: GARY BRUESKE
Contact address: 18487 GRAND AVE
LAKE ELSINORE, CA 92530
Contact country: Not reported
Contact telephone: 951-757-3672
Contact email: MK_MOTORSPORTS@OUTLOOK.COM
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: GARY BRUESKE
Owner/operator address: 18487 GRAND AVE
LAKE ELSINORE, CA 92530
Owner/operator country: Not reported
Owner/operator telephone: 951-757-3672
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: GARY BRUESKE
Owner/operator address: 18487 GRAND AVE
LAKE ELSINORE, CA 92530
Owner/operator country: Not reported
Owner/operator telephone: 951-757-3672
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No

MK MOTORSPORTS INC (Continued) **1024863057**

Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	Yes
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

B6 **STREAMLINE TRANSMISSION** **RCRA NonGen / NLR** **1024823130**
SSW **31881 CORYDON ST STE 150** **CAL000342955**
1/8-1/4 **LAKE ELSINORE, CA 92530**
0.145 mi.
766 ft. **Site 4 of 4 in cluster B**

Relative:
Lower

Actual:
1273 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/13/2009
Facility name:	STREAMLINE TRANSMISSION
Facility address:	31881 CORYDON ST STE 150 LAKE ELSINORE, CA 92530-8519
EPA ID:	CAL000342955
Mailing address:	31881 CORYDON ST #150 LAKE ELSINORE, CA 92530-0000
Contact:	VIEN SON
Contact address:	31881 CORYDON ROAD SUITE #150 LAKE ELSINORE, CA 92530
Contact country:	Not reported
Contact telephone:	951-674-6127
Contact email:	STREAMLINETRANSMISSION@YAHOO.COM
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	STREAMLINE TRANSMISSION
Owner/operator address:	31881 CORYDON ST SUITE 150 LAKE ELSINORE, CA 92530
Owner/operator country:	Not reported
Owner/operator telephone:	951-674-6127
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	VIEN SON
Owner/operator address:	31881 CORYDON ROAD SUITE #150 LAKE ELSINORE, CA 92530

STREAMLINE TRANSMISSION (Continued) **1024823130**

Owner/operator country: Not reported
Owner/operator telephone: 951-674-6127
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: Yes
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

C7 **LAKE EISINORE MATERIALS** **CERS HAZ WASTE** **S113024236**
ESE **33600 MISSION TRAIL** **HAZNET** **N/A**
1/8-1/4 **WILDOMAR, CA 92595** **CERS**
0.154 mi.
814 ft. **Site 1 of 2 in cluster C**

Relative:
Higher

Actual:
1289 ft.

CERS HAZ WASTE:
Name: SUNBELT RENTALS PC 070
Address: 33600 MISSION TRAIL
City,State,Zip: WILDOMAR, CA 92595
Site ID: 422958
CERS ID: 10151321
CERS Description: Hazardous Waste Generator

HAZNET:
Name: LAKE EISINORE MATERIALS
Address: 33600 MISSION TRAIL
City,State,Zip: WILDOMAR, CA 925950000
Year: 1993
GEPAID: CAL000007278
Contact: DENNIS YOUNGER/
Telephone: 7146743614
Mailing Name: Not reported
Mailing Address: 33600 MISSION TRL
Mailing City,St,Zip: WILDOMAR, CA 925958429
Gen County: Riverside
TSD EPA ID: CAT080011059
TSD County: Los Angeles
Tons: 0.2

LAKE EISINORE MATERIALS (Continued) **S113024236**

CA Waste Code: 223-Unspecified oil-containing waste
Method: -
Facility County: Riverside

Name: LAKE EISINORE MATERIALS
Address: 33600 MISSION TRAIL
City,State,Zip: WILDOMAR, CA 925950000
Year: 1993
GEPAID: CAL000007278
Contact: DENNIS YOUNGER/
Telephone: 7146743614
Mailing Name: Not reported
Mailing Address: 33600 MISSION TRL
Mailing City,St,Zip: WILDOMAR, CA 925958429
Gen County: Riverside
TSD EPA ID: CAT080011059
TSD County: Los Angeles
Tons: 0.068
CA Waste Code: 343-Unspecified organic liquid mixture
Method: -
Facility County: Riverside

Name: LAKE EISINORE MATERIALS
Address: 33600 MISSION TRAIL
City,State,Zip: WILDOMAR, CA 925950000
Year: 1992
GEPAID: CAL000007278
Contact: DENNIS YOUNGER/
Telephone: 7146743614
Mailing Name: Not reported
Mailing Address: 33600 MISSION TRL
Mailing City,St,Zip: WILDOMAR, CA 925958429
Gen County: Riverside
TSD EPA ID: WAD009477175
TSD County: 99
Tons: 0
CA Waste Code: 581-Gas scrubber waste
Method: 01-
Facility County: Riverside

Name: LAKE EISINORE MATERIALS
Address: 33600 MISSION TRAIL
City,State,Zip: WILDOMAR, CA 925950000
Year: 1988
GEPAID: CAL000007278
Contact: DENNIS YOUNGER/
Telephone: 7146743614
Mailing Name: Not reported
Mailing Address: 33600 MISSION TRL
Mailing City,St,Zip: WILDOMAR, CA 925958429
Gen County: Riverside
TSD EPA ID: CAT000646117
TSD County: Kings
Tons: 10.1136
CA Waste Code: 611-Contaminated soil from site clean-up
Method: D80-Disposal, Land Fill
Facility County: Riverside

LAKE EISINORE MATERIALS (Continued) **S113024236**

Name: LAKE EISINORE MATERIALS
Address: 33600 MISSION TRAIL
City,State,Zip: WILDOMAR, CA 925950000
Year: 1988
GEPAID: CAL000007278
Contact: DENNIS YOUNGER/
Telephone: 7146743614
Mailing Name: Not reported
Mailing Address: 33600 MISSION TRL
Mailing City,St,Zip: WILDOMAR, CA 925958429
Gen County: Riverside
TSD EPA ID: CAT000646117
TSD County: Kings
Tons: 0
CA Waste Code: -
Method: 03-
Facility County: Riverside

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

CERS:
Name: SUNBELT RENTALS PC 070
Address: 33600 MISSION TRAIL
City,State,Zip: WILDOMAR, CA 92595
Site ID: 422958
CERS ID: 10151321
CERS Description: Chemical Storage Facilities

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 02-25-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: HM Disclosure inspection
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-20-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-20-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS

LAKE EISINORE MATERIALS (Continued) **S113024236**

Coordinates:

Site ID:	422958
Facility Name:	Sunbelt Rentals PC 070
Env Int Type Code:	HMBP
Program ID:	10151321
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.
Latitude:	33.632640
Longitude:	-117.289340

Affiliation:

Affiliation Type Desc:	Environmental Contact
Entity Name:	Michael Crouch
Entity Title:	Not reported
Affiliation Address:	2341 Deerfield Drive
Affiliation City:	Fort Mill
Affiliation State:	SC
Affiliation Country:	Not reported
Affiliation Zip:	29715
Affiliation Phone:	Not reported

Affiliation Type Desc:	Parent Corporation
Entity Name:	SUNBELT RENTALS, INC.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Robert Aycock
Entity Title:	Profit Center Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	CUPA District
Entity Name:	Riverside Cnty Env Health
Entity Title:	Not reported
Affiliation Address:	4065 County Circle Drive, Room 104
Affiliation City:	Riverside
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92503
Affiliation Phone:	(951) 358-5055

Affiliation Type Desc:	Document Preparer
Entity Name:	MCox/MCrouch//RAycock
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported

LAKE EISINORE MATERIALS (Continued) **S113024236**

Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	2341 Deerfield Drive
Affiliation City:	Fort Mill
Affiliation State:	SC
Affiliation Country:	Not reported
Affiliation Zip:	29715
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	Sunbelt Rentals PC 070
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(951) 253-8040
Affiliation Type Desc:	Legal Owner
Entity Name:	SUNBELT RENTALS, INC.
Entity Title:	Not reported
Affiliation Address:	2341 Deerfield Drive
Affiliation City:	Fort Mill
Affiliation State:	SC
Affiliation Country:	United States
Affiliation Zip:	29715
Affiliation Phone:	(803) 578-2912

C8 **SUNBELT RENTALS INC PC 070** **RCRA NonGen / NLR** **1024859740**
ESE **33600 MISSION TRAIL** **CAL000427259**
1/8-1/4 **WILDOMAR, CA 92595**
0.154 mi.
814 ft. **Site 2 of 2 in cluster C**

Relative:
Higher

Actual:
1289 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/01/2017
Facility name:	SUNBELT RENTALS INC PC 070
Facility address:	33600 MISSION TRAIL WILDOMAR, CA 92595
EPA ID:	CAL000427259
Mailing address:	2341 DEERFIELD DR FORT MILL, SC 29715-8298
Contact:	MIKE CROUCH, PG, PE
Contact address:	2341 DEERFIELD DRIVE FORT MILL, SC 29715
Contact country:	Not reported
Contact telephone:	803-578-5912
Contact email:	MICHAEL.CROUCH@SUNBELTRENTALS.COM
EPA Region:	09
Classification:	Non-Generator

SUNBELT RENTALS INC PC 070 (Continued) **1024859740**

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	SUNBELT RENTALS INC
Owner/operator address:	2341 DEERFIELD DR
	FORT MILL, SC 29715
Owner/operator country:	Not reported
Owner/operator telephone:	803-578-5912
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	MIKE CROUCH, PG, PE
Owner/operator address:	2341 DEERFIELD DRIVE
	FORT MILL, SC 29715
Owner/operator country:	Not reported
Owner/operator telephone:	803-578-5912
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	Yes
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

9
SSE
1/8-1/4
0.177 mi.
937 ft.

ELSINORE VALLEY MUNICIPAL WATER DISTRICT
33751 MISSION TRAIL
WILDOMAR, CA 92595

LUST **S109284864**
CERS **N/A**

Relative:
Higher

Actual:
1285 ft.

LUST:

Name:	ELSINORE VALLEY MUNICIPAL WATER DISTRICT
Address:	33751 MISSION TRAIL
City,State,Zip:	WILDOMAR, CA 92595
Lead Agency:	RIVERSIDE COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606500259
Global Id:	T0606500259
Latitude:	33.6318750589029
Longitude:	-117.291201147955
Status:	Completed - Case Closed
Status Date:	11/09/1993
Case Worker:	RIV
RB Case Number:	083302003T
Local Agency:	RIVERSIDE COUNTY LOP
File Location:	Local Agency Warehouse
Local Case Number:	911100
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

LUST:

Global Id:	T0606500259
Contact Type:	Regional Board Caseworker
Contact Name:	CARL BERNHARDT
Organization Name:	SANTA ANA RWQCB (REGION 8)
Address:	3737 MAIN STREET, SUITE 500
City:	RIVERSIDE
Email:	carl.bernhardt@waterboards.ca.gov
Phone Number:	9517824495

Global Id:	T0606500259
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

LUST:

Global Id:	T0606500259
Action Type:	ENFORCEMENT
Date:	11/08/1993
Action:	File review - #RCDEH Upload Site File 5/13/2015

Global Id:	T0606500259
Action Type:	Other
Date:	11/11/1991
Action:	Leak Discovery

Global Id:	T0606500259
Action Type:	Other

ELSINORE VALLEY MUNICIPAL WATER DISTRICT (Continued) **S109284864**

Date: 10/28/1991
Action: Leak Stopped

Global Id: T0606500259
Action Type: Other
Date: 11/26/1991
Action: Leak Reported

Global Id: T0606500259
Action Type: ENFORCEMENT
Date: 11/09/1993
Action: Closure/No Further Action Letter - #RivCo Closure

LUST:
Global Id: T0606500259
Status: Open - Case Begin Date
Status Date: 10/28/1991

Global Id: T0606500259
Status: Open - Site Assessment
Status Date: 01/06/1992

Global Id: T0606500259
Status: Open - Remediation
Status Date: 06/01/1992

Global Id: T0606500259
Status: Completed - Case Closed
Status Date: 11/09/1993

CERS:
Name: ELSINORE VALLEY MUNICIPAL WATER DISTRICT
Address: 33751 MISSION TRAIL
City,State,Zip: WILDOMAR, CA 92595
Site ID: 260585
CERS ID: T0606500259
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: CARL BERNHARDT - SANTA ANA RWQCB (REGION 8)
Entity Title: Not reported
Affiliation Address: 3737 MAIN STREET, SUITE 500
Affiliation City: RIVERSIDE
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: 9517824495

Affiliation Type Desc: Local Agency Caseworker
Entity Name: Riverside County LOP - RIVERSIDE COUNTY LOP
Entity Title: Not reported
Affiliation Address: 3880 LEMON ST SUITE 200
Affiliation City: RIVERSIDE
Affiliation State: CA
Affiliation Country: Not reported

ELSINORE VALLEY MUNICIPAL WATER DISTRICT (Continued) **S109284864**

Affiliation Zip: Not reported
Affiliation Phone: 9519558980

10
SSW
1/8-1/4
0.177 mi.
937 ft.

GERSTNER PRECISION **RCRA-VSQG** **1024877315**
31883 CORYDON STREET UNIT 110 **CAR000289199**
LAKE ELSINORE, CA 92530

Relative:
Lower

Actual:
1272 ft.

RCRA-VSQG:
Date form received by agency: 10/16/2018
Facility name: GERSTNER PRECISION
Facility address: 31883 CORYDON STREET UNIT 110
LAKE ELSINORE, CA 92530
EPA ID: CAR000289199
Mailing address: CORYDON STREET UNIT 110
LAKE ELSINORE, CA 92530
Contact: ANTHONY GERSTNER
Contact address: CORYDON STREET UNIT 110
LAKE ELSINORE, CA 92530
Contact country: US
Contact telephone: 951-674-8770
Contact email: TONY@GERSTNERPRECISION.COM
EPA Region: 09
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:
Owner/operator name: ANTHONY GERSTNER
Owner/operator address: 32126 CABERNET PLACE
WILDOMAR, CA 92595
Owner/operator country: US
Owner/operator telephone: 951-378-1522
Owner/operator email: TONY@GERSTNERPRECISION.COM
Owner/operator fax: 951-674-8870
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 10/16/2018
Owner/Op end date: Not reported

Owner/operator name: ANTHONY GERSTNER
Owner/operator address: 32126 CABERNET PLACE

GERSTNER PRECISION (Continued) **1024877315**

WILDOMAR, CA 92595
Owner/operator country: US
Owner/operator telephone: 951-378-1522
Owner/operator email: TONY@GERSTNERPRECISION.COM
Owner/operator fax: 951-674-8870
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 10/16/2018
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): Yes
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:

. Waste code: 221
. Waste name: Waste oil and mixed oil

. Waste code: F037
. Waste name: PETROLEUM REFINERY PRIMARY OIL/WATER/SOLIDS SEPARATION SLUDGE - ANY SLUDGE GENERATED FROM THE GRAVITATIONAL SEPARATION OF OIL/WATER/SOLIDS DURING THE STORAGE OR TREATMENT OF PROCESS WASTEWATERS AND OILY COOLING WASTEWATERS FROM PETROLEUM REFINERIES. SUCH SLUDGES INCLUDE, BUT ARE NOT LIMITED TO, THOSE GENERATED IN OIL/WATER/SOLIDS SEPARATORS; TANKS AND IMPOUNDMENTS; DITCHES AND OTHER CONVEYANCES; SUMPS; AND STORM WATER UNITS RECEIVING DRY WEATHER FLOW. SLUDGES GENERATED IN STORM WATER UNITS THAT DO NOT RECEIVE DRY WEATHER FLOW, SLUDGES GENERATED IN AGGRESSIVE BIOLOGICAL TREATMENT UNITS AS DEFINED IN SECTION 261.31(B)(2) (INCLUDING SLUDGES GENERATED IN ONE OR MORE ADDITIONAL UNITS AFTER WASTEWATERS HAVE BEEN TREATED IN AGGRESSIVE BIOLOGICAL TREATMENT UNITS), AND K051 WASTES ARE EXEMPTED FROM THIS LISTING.

. Waste code: F038
. Waste name: PETROLEUM REFINERY SECONDARY (EMULSIFIED) OIL/WATER/SOLIDS SEPARATION SLUDGE - ANY SLUDGE AND/OR FLOAT GENERATED FROM THE PHYSICAL AND/OR CHEMICAL SEPARATION OF OIL/WATER/SOLIDS IN PROCESS WASTEWATERS AND OILY COOLING WASTEWATERS FROM PETROLEUM REFINERIES. SUCH WASTES INCLUDE, BUT ARE NOT LIMITED TO, ALL SLUDGES AND FLOATS GENERATED IN INDUCED AIR FLOTATION (IAF) UNITS, TANKS AND IMPOUNDMENTS, AND ALL SLUDGES GENERATED IN DAF UNITS. SLUDGES GENERATED IN STORMWATER UNITS

GERSTNER PRECISION (Continued) **1024877315**

THAT DO NOT RECEIVE DRY WEATHER FLOW, SLUDGES GENERATED IN AGGRESSIVE BIOLOGICAL TREATMENT UNITS AS DEFINED IN SECTION 261.31(B)(2) (INCLUDING SLUDGES GENERATED IN ONE OR MORE ADDITIONAL UNITS AFTER WASTEWATERS HAVE BEEN TREATED IN AGGRESSIVE BIOLOGICAL TREATMENT UNITS), AND F037, K048, AND K051 WASTES ARE EXEMPTED FROM THIS LISTING.

Violation Status: No violations found

11
SSW
1/8-1/4
0.202 mi.
1069 ft.

TACTICAL TECHNOLOGIES, LLC **CERS HAZ WASTE** **S123537138**
31877 CORYDON ST #140 **N/A**
LAKE ELSINORE, CA 92530

Relative:
Higher

Actual:
1275 ft.

CERS HAZ WASTE:
Name: TACTICAL TECHNOLOGIES, LLC
Address: 31877 CORYDON ST #140
City,State,Zip: LAKE ELSINORE, CA 92530
Site ID: 159487
CERS ID: 10327750
CERS Description: Hazardous Waste Generator

Violations:
Site ID: 159487
Site Name: Tactical Technologies, LLC
Violation Date: 08-24-2016
Citation: 40 CFR 1 262.34(d)(5)(ii) - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 262.34(d)(5)(ii)
Violation Description: Failure to post the following information next to the telephone: (A) The name and telephone number of the emergency coordinator; (B) Location of fire extinguishers and spill control material, and, if present, fire alarm; and (C) The telephone number of the fire department, unless the facility has a direct alarm.
Violation Notes: Returned to compliance on 08/24/2016.
Violation Division: Riverside County Department of Env Health
Violation Program: HW
Violation Source: CERS

Site ID: 159487
Site Name: Tactical Technologies, LLC
Violation Date: 08-24-2016
Citation: 40 CFR 1 265.171 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.171
Violation Description: Failure to accumulate hazardous waste in a container that is in good condition.
Violation Notes: Returned to compliance on 08/24/2016.
Violation Division: Riverside County Department of Env Health
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-14-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Riverside County Department of Env Health
Eval Program: HW

TACTICAL TECHNOLOGIES, LLC (Continued) **S123537138**

Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-24-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Riverside County Department of Env Health
Eval Program: HW
Eval Source: CERS

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Riverside Cnty Env Health
Entity Title: Not reported
Affiliation Address: 4065 County Circle Drive, Room 104
Affiliation City: Riverside
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92503
Affiliation Phone: (951) 358-5055

Affiliation Type Desc: Parent Corporation
Entity Name: Tactical Technologies, LLC
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 31877 Corydon St #140
Affiliation City: Lake Elsinore
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92530
Affiliation Phone: Not reported

D12 **CBR PERFORMANCE PRODUCTS INC** **RCRA NonGen / NLR** **1024850021**
SSW **31887 CORYDON ST STE 170** **CAL000407173**
1/8-1/4 **LAKE ELSINORE, CA 92530**
0.213 mi.
1122 ft. **Site 1 of 2 in cluster D**

Relative: RCRA NonGen / NLR:
Lower Date form received by agency: 05/20/2015
Facility name: CBR PERFORMANCE PRODUCTS INC
Actual: Facility address: 31887 CORYDON ST STE 170
1272 ft. LAKE ELSINORE, CA 92530-8507
EPA ID: CAL000407173
Contact: GEORGEANNA BARRY
Contact address: 31887 CORYDON ST STE 170

CBR PERFORMANCE PRODUCTS INC (Continued) **1024850021**

LAKE ELSINORE, CA 92530-8507
Contact country: Not reported
Contact telephone: 951-245-2900
Contact email: GEORGEANNA@CBR-PERFORMANCE.COM
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: CBR PERFORMANCE PRODUCTS INC
Owner/operator address: 31887 CORYDON ST STE 170
LAKE ELSINORE, CA 92530
Owner/operator country: Not reported
Owner/operator telephone: 951-245-2900
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: GEORGEANNA BARRY
Owner/operator address: 31887 CORYDON ST STE 170
LAKE ELSINORE, CA 92530
Owner/operator country: Not reported
Owner/operator telephone: 951-245-2900
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: Yes
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

D13 **SO CAL VETTES & HOT RODS** **RCRA NonGen / NLR** **1024840062**
SSW **31889 CORYDON ST STE 170** **CAL000388433**
1/8-1/4 **LAKE ELSINORE, CA 92530**
0.232 mi.
1223 ft. **Site 2 of 2 in cluster D**

Relative:
Lower

Actual:
1271 ft.

RCRA NonGen / NLR:

Date form received by agency:	08/08/2013
Facility name:	SO CAL VETTES & HOT RODS
Facility address:	31889 CORYDON ST STE 170 LAKE ELSINORE, CA 92530-8510
EPA ID:	CAL000388433
Mailing address:	31889 CORYDON STREET UNIT #170 LAKE ELSINORE, CA 92530-8510
Contact:	ROCKY QUINTUS
Contact address:	31889 CORYDON STREET UNIT #170 LAKE ELSINORE, CA 92530
Contact country:	Not reported
Contact telephone:	951-674-8388
Contact email:	SOCALVETTES@GMAIL.COM
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	ROCKY QUINTUS
Owner/operator address:	31889 CORYDON STREET UNIT #170 LAKE ELSINORE, CA 92530
Owner/operator country:	Not reported
Owner/operator telephone:	951-674-8388
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	ROCKY QUINTUS
Owner/operator address:	33470 BRAND ST LAKE ELSINORE, CA 92530
Owner/operator country:	Not reported
Owner/operator telephone:	951-694-3741
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	Yes
Treater, storer or disposer of HW:	No

SO CAL VETTES & HOT RODS (Continued) **1024840062**

Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

E14 **SEDCO PIERS INC** **CERS HAZ WASTE S123502163**
NNE **33320 MISSION TR** **CERS N/A**
1/8-1/4 **WILDOMAR, CA 92595**
0.239 mi.
1262 ft. **Site 1 of 2 in cluster E**

Relative: Higher

Actual: 1275 ft.

CERS HAZ WASTE:
Name: SEDCO PIERS INC
Address: 33320 MISSION TR
City,State,Zip: WILDOMAR, CA 92595
Site ID: 152345
CERS ID: 10320025
CERS Description: Hazardous Waste Generator

CERS:
Name: SEDCO PIERS INC
Address: 33320 MISSION TR
City,State,Zip: WILDOMAR, CA 92595
Site ID: 152345
CERS ID: 10320025
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 152345
Site Name: Sedco Piers Inc
Violation Date: 06-20-2017
Citation: HSC 6.95 25508.2 - California Health and Safety Code, Chapter 6.95, Section(s) 25508.2
Violation Description: Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.
Violation Notes: Returned to compliance on 09/18/2017.
Violation Division: Riverside County Department of Env Health
Violation Program: HMRRP
Violation Source: CERS

Site ID: 152345
Site Name: Sedco Piers Inc
Violation Date: 06-20-2017
Citation: HSC 6.95 25505(c) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(c)
Violation Description: Failure to have a business plan readily available to personnel of the business or the unified program facility with responsibilities for emergency response or training.
Violation Notes: Returned to compliance on 09/18/2017.
Violation Division: Riverside County Department of Env Health

SEDCO PIERS INC (Continued) **S123502163**

Violation Program: HMRRP
Violation Source: CERS

Site ID: 152345
Site Name: Sedco Piers Inc
Violation Date: 06-20-2017
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)
Violation Description: Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.
Violation Notes: Returned to compliance on 09/18/2017.
Violation Division: Riverside County Department of Env Health
Violation Program: HMRRP
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-20-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 09-18-2017
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Riverside County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Riverside Cnty Env Health
Entity Title: Not reported
Affiliation Address: 4065 County Circle Drive, Room 104
Affiliation City: Riverside
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92503
Affiliation Phone: (951) 358-5055

Affiliation Type Desc: Environmental Contact
Entity Name: Gary Vollan
Entity Title: Not reported
Affiliation Address: 33320 Mission Trail
Affiliation City: wildomar
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 92595
Affiliation Phone: Not reported

SEDCO PIERS INC (Continued) **S123502163**

Affiliation Type Desc:	Legal Owner
Entity Name:	Gary Vollan
Entity Title:	Not reported
Affiliation Address:	33320 Mission Tr
Affiliation City:	Wildomar
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	92595
Affiliation Phone:	(909) 674-5151

Affiliation Type Desc:	Operator
Entity Name:	Gary Vollan
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(951) 674-4011

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	33320 Mission Tr
Affiliation City:	Wildomar
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92595
Affiliation Phone:	Not reported

Affiliation Type Desc:	Parent Corporation
Entity Name:	Sedco Piers Inc
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

E15 **SEDCO PIER INC** **RCRA NonGen / NLR** **1024831762**
NNE **33320 MISSION TRL** **CAL000369143**
1/8-1/4 **WILDOMAR, CA 92595**
0.239 mi.
1262 ft. **Site 2 of 2 in cluster E**

Relative:
Higher

Actual:
1275 ft.

RCRA NonGen / NLR:

Date form received by agency:	11/18/2011
Facility name:	SEDCO PIER INC
Facility address:	33320 MISSION TRL WILDOMAR, CA 92595-8426
EPA ID:	CAL000369143
Contact:	GARY VOLLAN
Contact address:	33320 MISSION TRL WILDOMAR, CA 92595
Contact country:	Not reported
Contact telephone:	951-674-4011

SEDCO PIER INC (Continued) **1024831762**

Contact email: SEDCOPIER@VERIZON.NET
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: GARY VOLLAN
Owner/operator address: 33320 MISSION TRL
WILDOMAR, CA 92595
Owner/operator country: Not reported
Owner/operator telephone: 951-674-4011
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: SEDCO PIER INC
Owner/operator address: 33320 MISSION TRL
WILDOMAR, CA 92595
Owner/operator country: Not reported
Owner/operator telephone: 951-674-4011
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: Yes
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

16
SSE
1/4-1/2
0.303 mi.
1601 ft.

CIRCLE K #5093
33982 MISSION TRL
LAKE ELSINORE, CA 92330

SWEEPS UST
CA FID UST
HIST CORTESE

S101631103
N/A

Relative:
Higher

Actual:
1289 ft.

SWEEPS UST:

Name:	CIRCLE K #5093
Address:	33982 MISSION TRL
City:	LAKE ELSINORE
Status:	Active
Comp Number:	13835
Number:	1
Board Of Equalization:	Not reported
Referral Date:	10-28-92
Action Date:	10-28-92
Created Date:	07-20-90
Owner Tank Id:	1738
SWRCB Tank Id:	33-000-013835-000001
Tank Status:	A
Capacity:	10000
Active Date:	10-28-92
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	3

Name:	CIRCLE K #5093
Address:	33982 MISSION TRL
City:	LAKE ELSINORE
Status:	Active
Comp Number:	13835
Number:	1
Board Of Equalization:	Not reported
Referral Date:	10-28-92
Action Date:	10-28-92
Created Date:	07-20-90
Owner Tank Id:	1738
SWRCB Tank Id:	33-000-013835-000002
Tank Status:	A
Capacity:	10000
Active Date:	10-28-92
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Name:	CIRCLE K #5093
Address:	33982 MISSION TRL
City:	LAKE ELSINORE
Status:	Active
Comp Number:	13835
Number:	1
Board Of Equalization:	Not reported
Referral Date:	10-28-92
Action Date:	10-28-92
Created Date:	07-20-90
Owner Tank Id:	1738
SWRCB Tank Id:	33-000-013835-000003

CIRCLE K #5093 (Continued) **S101631103**

Tank Status: A
Capacity: 10000
Active Date: 10-28-92
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 33006894
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 7142454210
Mail To: Not reported
Mailing Address: 6101 N SIERRA AVE
Mailing Address 2: Not reported
Mailing City,St,Zip: LAKE ELSINORE 92330
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

HIST CORTESE:
edr_fname: TOSCO/ CIRCLE K STORE #50
edr_fadd1: 33982
City,State,Zip: LAKE ELSINORE, CA 92330
Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 083303160T

17
SSW
1/4-1/2
0.380 mi.
2005 ft.

Relative:
Lower

Actual:
1271 ft.

PERALTA ENTERPRISES INC DBA ALL TUNE & LUBE
31949 CORYDON RD UNIT 140 & 150
LAKE ELSINORE, CA 92530

SWRCY **S113150051**
HAZNET **N/A**
NPDES
CIWQS
CERS

SWRCY:
Name: LOVE EARTH RECYCLING
Address: 31949 CORYDON RD #160
City,State,Zip: LAKE ELSINORE, CA 92530
Reg Id: 246836
Cert Id: RC246836.001
Mailing Address: 31949 CORYDON ST STE 160
Mailing City: Lake Elsinore
Mailing State: CA
Mailing Zip Code: Not reported
Website: Not reported
Email: Not reported
Phone Number: (909) 919-4206
Rural: N
Operation Begin Date: 05/27/2016

PERALTA ENTERPRISES INC DBA ALL TUNE & LUBE (Continued) **S113150051**

Aluminium:	Y
Glass:	Y
Plastic:	Y
Bimetal:	Y
Hours of Operation:	Mon - Sat 9:00 am - 5:00 pm; Sun Closed
Organization ID:	244465
Organization Name:	Metallic Corporation

HAZNET:

Name:	PERALTA ENTERPRISES INC DBA ALL TUNE & LUBE
Address:	31949 CORYDON RD UNIT 140 & 150
City,State,Zip:	LAKE ELSINORE, CA 92530
Year:	2008
GEPAID:	CAL000325396
Contact:	EDGAR PERALTA-RUIZ
Telephone:	9516742711
Mailing Name:	Not reported
Mailing Address:	31949 CORYDON RD STE 140
Mailing City,St,Zip:	LAKE ELSINORE, CA 925308536
Gen County:	Riverside
TSD EPA ID:	CAT000613893
TSD County:	Los Angeles
Tons:	0.22935
CA Waste Code:	342-Organic liquids with metals (Alkaline solution (pH >= 12.5) with metals)
Method:	H141-Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	Riverside

NPDES:

Name:	LOVE EARTH RECYCLING
Address:	31949 CORYDON RD SUITE # 160
City,State,Zip:	LAKE ELSINORE, CA 92530
Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	8 33I026704
Regulatory Measure Type:	Industrial
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Active
Status Date:	07/22/2016
Operator Name:	loveearthrecycling
Operator Address:	31949 corydon rd suite # 160
Operator City:	lake elsinore

PERALTA ENTERPRISES INC DBA ALL TUNE & LUBE (Continued) **S113150051**

Operator State:	California
Operator Zip:	92530
NPDES as of 03/2018:	
NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	475042
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 33I026704
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	07/22/2016
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	loveearthrecycling
Discharge Address:	31949 corydon rd suite # 160
Discharge City:	lake elsinore
Discharge State:	California
Discharge Zip:	92530
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported

PERALTA ENTERPRISES INC DBA ALL TUNE & LUBE (Continued) **S113150051**

Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	475042
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 33I026704
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	07/15/2016
Processed Date:	07/22/2016
Status:	Active
Status Date:	07/22/2016
Place Size:	2356
Place Size Unit:	SqFt
Contact:	Irfan Jasani
Contact Title:	Not reported
Contact Phone:	909-919-4206
Contact Phone Ext:	Not reported
Contact Email:	irfanjasani5@gmail.com
Operator Name:	loveearthrecycling
Operator Address:	31949 corydon rd suite # 160
Operator City:	lake elsinore
Operator State:	California
Operator Zip:	92530

PERALTA ENTERPRISES INC DBA ALL TUNE & LUBE (Continued) **S113150051**

Operator Contact:	Irfan Jasani
Operator Contact Title:	Not reported
Operator Contact Phone:	909-919-4206
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	irfanjasani5@gmail.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Lake Elsinore
Certifier:	irfan jasani
Certifier Title:	ceo
Certification Date:	15-JUL-16
Primary Sic:	5093-Scrap and Waste Materials
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Name:	LOVE EARTH RECYCLING
Address:	31949 CORYDON RD SUITE # 160
City,State,Zip:	LAKE ELSINORE, CA 92530
Facility Status:	Active
NPDES Number:	CAS000001
Region:	8
Agency Number:	0
Regulatory Measure ID:	475042
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	8 33I026704
Regulatory Measure Type:	Enrollee
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	07/22/2016

PERALTA ENTERPRISES INC DBA ALL TUNE & LUBE (Continued) **S113150051**

Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	31949 corydon rd suite # 160
Discharge Name:	loveearthrecycling
Discharge City:	lake elsinore
Discharge State:	California
Discharge Zip:	92530
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	475042
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 33I026704
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	07/22/2016
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	loveearthrecycling
Discharge Address:	31949 corydon rd suite # 160
Discharge City:	lake elsinore
Discharge State:	California
Discharge Zip:	92530
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported

PERALTA ENTERPRISES INC DBA ALL TUNE & LUBE (Continued) **S113150051**

Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	8
Regulatory Measure ID:	475042
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 33I026704
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	07/15/2016
Processed Date:	07/22/2016
Status:	Active
Status Date:	07/22/2016

PERALTA ENTERPRISES INC DBA ALL TUNE & LUBE (Continued) **S113150051**

Place Size:	2356
Place Size Unit:	SqFt
Contact:	Irfan Jasani
Contact Title:	Not reported
Contact Phone:	909-919-4206
Contact Phone Ext:	Not reported
Contact Email:	irfanjasani5@gmail.com
Operator Name:	loveearthrecycling
Operator Address:	31949 corydon rd suite # 160
Operator City:	lake elsinore
Operator State:	California
Operator Zip:	92530
Operator Contact:	Irfan Jasani
Operator Contact Title:	Not reported
Operator Contact Phone:	909-919-4206
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	irfanjasani5@gmail.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Lake Elsinore
Certifier:	irfan jasani
Certifier Title:	ceo
Certification Date:	15-JUL-16
Primary Sic:	5093-Scrap and Waste Materials
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CIWQS:

Name:	LOVE EARTH RECYCLING
Address:	31949 CORYDON RD SUITE # 160

PERALTA ENTERPRISES INC DBA ALL TUNE & LUBE (Continued) **S113150051**

City,State,Zip:	LAKE ELSINORE, CA 92530
Agency:	loveearthrecycling
Agency Address:	31949 corydon rd suite # 160, Lake Elsinore, CA 92530
Place/Project Type:	Industrial - Scrap and Waste Materials
SIC/NAICS:	5093
Region:	8
Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	8 33I026704
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	07/22/2016
Termination Date:	Not reported
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	33.629465
Longitude:	-117.295846

CERS:

Name:	LOVE EARTH RECYCLING
Address:	31949 CORYDON RD SUITE # 160
City,State,Zip:	LAKE ELSINORE, CA 92530
Site ID:	536002
CERS ID:	847953
CERS Description:	Industrial Facility Storm Water

Affiliation:

Affiliation Type Desc:	Owner/Operator
Entity Name:	loveearthrecycling
Entity Title:	Operator
Affiliation Address:	31949 corydon rd suite # 160
Affiliation City:	lake elsinore
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92530
Affiliation Phone:	Not reported

F18 **TOSCO/ CIRCLE K STORE #5093** **LUST** **S103464028**
SSE **33982 MISSION TRAIL** **N/A**
1/4-1/2 **LAKE ELSINORE, CA 92530**
0.450 mi.
2375 ft. **Site 1 of 2 in cluster F**

Relative: **Higher**

Actual: **1293 ft.**

LUST REG 8:

Name:	TOSCO/ CIRCLE K STORE #5093
Address:	33982 MISSION TRAIL
City:	LAKE ELSINORE
Region:	8
County:	Riverside
Regional Board:	Santa Ana Region

TOSCO/ CIRCLE K STORE #5093 (Continued) **S103464028**

Facility Status:	Case Closed
Case Number:	083303160T
Local Case Num:	980287
Case Type:	Soil only
Substance:	Gasoline
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	Not reported
Enf Type:	CLOS
Funding:	Not reported
How Discovered:	Not reported
How Stopped:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Global ID:	T0606500523
How Stopped Date:	Not reported
Enter Date:	5/6/1998
Date Confirmation of Leak Began:	4/1/1998
Date Preliminary Assessment Began:	12/22/1998
Discover Date:	4/1/1998
Enforcement Date:	Not reported
Close Date:	11/4/2002
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	5/6/1998
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	34.3502267
Longitude:	-117.2493057
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	3
Max MTBE Soil:	Not reported
MTBE Fuel:	1
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	NOM
Staff Initials:	UNK
Lead Agency:	Local Agency
Local Agency:	33000L
Hydr Basin #:	UPPER MOJAVE RIVER V
Beneficial:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Work Suspended:	Not reported

Summary: Not reported

F19 **TOSCO/ CIRCLE K STORE #5093** **LUST** **S104970879**
SSE **33982 MISSION TRAIL** **CERS** **N/A**
1/4-1/2 **LAKE ELSINORE, CA 92530**
0.450 mi.
2375 ft. **Site 2 of 2 in cluster F**

Relative:
Higher

Actual:
1293 ft.

LUST:

Name:	TOSCO/ CIRCLE K STORE #5093
Address:	33982 MISSION TRAIL
City,State,Zip:	LAKE ELSINORE, CA 92530
Lead Agency:	RIVERSIDE COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606500523
Global Id:	T0606500523
Latitude:	33.6272135586797
Longitude:	-117.290002857383
Status:	Completed - Case Closed
Status Date:	11/04/2002
Case Worker:	RIV
RB Case Number:	083303160T
Local Agency:	RIVERSIDE COUNTY LOP
File Location:	Not reported
Local Case Number:	980287
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0606500523
Contact Type:	Regional Board Caseworker
Contact Name:	NANCY OLSON-MARTIN
Organization Name:	SANTA ANA RWQCB (REGION 8)
Address:	3737 MAIN STREET, SUITE 500
City:	RIVERSIDE
Email:	nolson-martin@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0606500523
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

LUST:

Global Id:	T0606500523
Action Type:	ENFORCEMENT
Date:	11/01/2002
Action:	File review - #RCDEH site file

Global Id:	T0606500523
Action Type:	Other
Date:	04/01/1998
Action:	Leak Discovery

Global Id:	T0606500523
Action Type:	RESPONSE

TOSCO/ CIRCLE K STORE #5093 (Continued) **S104970879**

Date: 12/22/1998
Action: Preliminary Site Assessment Report

Global Id: T0606500523
Action Type: REMEDIATION
Date: 07/01/2001
Action: Soil Vapor Extraction (SVE)

Global Id: T0606500523
Action Type: REMEDIATION
Date: 03/16/1998
Action: Excavation

Global Id: T0606500523
Action Type: ENFORCEMENT
Date: 11/04/2002
Action: Closure/No Further Action Letter

Global Id: T0606500523
Action Type: Other
Date: 04/15/1998
Action: Leak Reported

LUST:
Global Id: T0606500523
Status: Open - Case Begin Date
Status Date: 04/01/1998

Global Id: T0606500523
Status: Open - Site Assessment
Status Date: 04/01/1998

Global Id: T0606500523
Status: Open - Site Assessment
Status Date: 12/15/1998

Global Id: T0606500523
Status: Open - Site Assessment
Status Date: 12/22/1998

Global Id: T0606500523
Status: Completed - Case Closed
Status Date: 11/04/2002

RIVERSIDE CO. LUST:
Name: CIRCLE K #5093
Address: 33982 MISSION TR
City,State,Zip: LAKE ELSINORE, CA
Region: RIVERSIDE
Facility ID: 980287
Employee: Winters
Site Closed: Yes
Case Type: Soil only
Facility Status: closed/action completed
Casetype Decode: Soil only is impacted

TOSCO/ CIRCLE K STORE #5093 (Continued) **S104970879**

Fstatus Decode: Closed/Action completed

CERS:
Name: TOSCO/ CIRCLE K STORE #5093
Address: 33982 MISSION TRAIL
City,State,Zip: LAKE ELSINORE, CA 92530
Site ID: 230610
CERS ID: T0606500523
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Local Agency Caseworker
Entity Name: Riverside County LOP - RIVERSIDE COUNTY LOP
Entity Title: Not reported
Affiliation Address: 3880 LEMON ST SUITE 200
Affiliation City: RIVERSIDE
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: 9519558980

Affiliation Type Desc: Regional Board Caseworker
Entity Name: NANCY OLSON-MARTIN - SANTA ANA RWQCB (REGION 8)
Entity Title: Not reported
Affiliation Address: 3737 MAIN STREET, SUITE 500
Affiliation City: RIVERSIDE
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

20
SE
1/2-1
0.716 mi.
3783 ft.

ELSINORE HIGH SCHOOL EXPANSION **ENVIROSTOR** **S107736291**
BUNDY CANYON ROAD/ORCHARD STREET **SCH** **N/A**
WILDOMAR, CA 92595

Relative:
Higher

Actual:
1325 ft.

ENVIROSTOR:
Name: ELSINORE HIGH SCHOOL EXPANSION
Address: BUNDY CANYON ROAD/ORCHARD STREET
City,State,Zip: WILDOMAR, CA 92595
Facility ID: 33010015
Status: No Further Action
Status Date: 06/04/2001
Site Code: 404116
Site Type: School Investigation
Site Type Detailed: School
Acres: 16.2
NPL: NO
Regulatory Agencies: DTSC
Lead Agency: DTSC
Program Manager: Not reported
Supervisor: Shahir Haddad
Division Branch: Southern California Schools & Brownfields Outreach
Assembly: 67
Senate: 28
Special Program: Not reported

ELSINORE HIGH SCHOOL EXPANSION (Continued) **S107736291**

Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 33.62655
Longitude: -117.2826
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: Arsenic DDE
Confirmed COC: Arsenic DDE
Potential Description: SOIL
Alias Name: ELSINORE HIGH SCH. EXPANSION (PROPOSED)
Alias Type: Alternate Name
Alias Name: ELSINORE HIGH SCHOOL EXPANSION
Alias Type: Alternate Name
Alias Name: ELSINORE HIGH SCHOOL EXPANSION (PROP)
Alias Type: Alternate Name
Alias Name: LAKE ELSINORE UNIFIED SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: LAKE ELSINORE USD-ELSINORE HS EXP/VCA
Alias Type: Alternate Name
Alias Name: 404116
Alias Type: Project Code (Site Code)
Alias Name: 33010015
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 10/10/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 11/15/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 03/22/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 06/04/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 08/15/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

ELSINORE HIGH SCHOOL EXPANSION (Continued) **S107736291**

Completed Document Type: * Workplan
Completed Date: 11/15/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 12/22/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 07/26/2000
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Name: ELSINORE HIGH SCHOOL EXPANSION
Address: BUNDY CANYON ROAD/ORCHARD STREET
City,State,Zip: WILDOMAR, CA 92595
Facility ID: 33010015
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 16.2
National Priorities List: NO
Cleanup Oversight Agencies: DTSC
Lead Agency: DTSC
Lead Agency Description: * DTSC
Project Manager: Not reported
Supervisor: Shahir Haddad
Division Branch: Southern California Schools & Brownfields Outreach
Site Code: 404116
Assembly: 67
Senate: 28
Special Program Status: Not reported
Status: No Further Action
Status Date: 06/04/2001
Restricted Use: NO
Funding: School District
Latitude: 33.62655
Longitude: -117.2826
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: Arsenic, DDE
Confirmed COC: Arsenic, DDE

ELSINORE HIGH SCHOOL EXPANSION (Continued) **S107736291**

Potential Description: SOIL
Alias Name: ELSINORE HIGH SCH. EXPANSION (PROPOSED)
Alias Type: Alternate Name
Alias Name: ELSINORE HIGH SCHOOL EXPANSION
Alias Type: Alternate Name
Alias Name: ELSINORE HIGH SCHOOL EXPANSION (PROP)
Alias Type: Alternate Name
Alias Name: LAKE ELSINORE UNIFIED SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: LAKE ELSINORE USD-ELSINORE HS EXP/VCA
Alias Type: Alternate Name
Alias Name: 404116
Alias Type: Project Code (Site Code)
Alias Name: 33010015
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 10/10/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 11/15/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 03/22/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 06/04/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 08/15/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Workplan
Completed Date: 11/15/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 12/22/2000
Comments: Not reported

ELSINORE HIGH SCHOOL EXPANSION (Continued) **S107736291**

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	07/26/2000
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 0 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/03/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/13/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 08/26/2019
Number of Days to Update: 6

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/07/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/19/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 08/26/2019
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 08/19/2019
Date Data Arrived at EDR: 08/20/2019
Date Made Active in Reports: 08/26/2019
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 36

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 04/29/2019
Date Data Arrived at EDR: 04/30/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 04/29/2019
Date Data Arrived at EDR: 04/30/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/13/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 55

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/17/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 03/08/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 03/12/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 50
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/23/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/13/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/12/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 55
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 08/26/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 42

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 41

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/12/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/03/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/17/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 03/08/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 54

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 03/12/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 50

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/23/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/12/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/05/2019
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 04/29/2019
Date Data Arrived at EDR: 04/30/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/20/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 57

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/03/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/26/2019
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/04/2019
Next Scheduled EDR Contact: 09/30/2019
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 07/25/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 08/15/2019
Number of Days to Update: 64

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 03/26/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 34

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/07/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 07/25/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 08/02/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/13/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 04/29/2019
Date Data Arrived at EDR: 04/30/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 07/08/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/14/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 7

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/13/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 06/28/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 26

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/04/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/11/2018
Number of Days to Update: 29

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/14/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 7

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 06/05/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/09/2019
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 07/30/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 65

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 49

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 05/15/2019
Date Data Arrived at EDR: 06/24/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 58

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/26/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 55

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 05/15/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 79

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/23/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/09/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/10/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/16/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/07/2019
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/09/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/18/2019
Next Scheduled EDR Contact: 09/30/2019
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/23/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 09/30/2018
Date Data Arrived at EDR: 04/24/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 106

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/26/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/25/2019
Date Data Arrived at EDR: 05/02/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/22/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/20/2019
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 34

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/12/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 07/03/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/20/2019
Date Data Arrived at EDR: 06/20/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 49

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/06/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/03/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/09/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/02/2019
Date Data Arrived at EDR: 04/02/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 42
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/01/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 04/01/2019
Date Data Arrived at EDR: 04/30/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 100

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 30

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/08/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/10/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/30/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 07/19/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/03/2019
Date Data Arrived at EDR: 05/29/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 71

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/27/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/30/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/30/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/27/2019
Date Data Arrived at EDR: 03/28/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 34

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/10/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 05/03/2019
Date Data Arrived at EDR: 06/05/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 90

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 74

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 07/15/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 04/07/2019
Date Data Arrived at EDR: 04/09/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 07/09/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 79

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/24/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 57

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 04/18/2019
Date Data Arrived at EDR: 04/19/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 11

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 08/15/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 55

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Annually

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/19/2019
Date Data Arrived at EDR: 03/22/2019
Date Made Active in Reports: 04/09/2019
Number of Days to Update: 18

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 06/03/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 65

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/24/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 59

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/24/2019
Next Scheduled EDR Contact: 09/30/2019
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 11/02/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 07/18/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/15/2019
Date Data Arrived at EDR: 05/16/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 63

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/07/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 05/29/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 54

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/12/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/08/2019
Date Data Arrived at EDR: 04/09/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/09/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 08/15/2019
Number of Days to Update: 65

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/17/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/09/2019
Number of Days to Update: 66

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/13/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/09/2019
Number of Days to Update: 66

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 08/15/2019
Number of Days to Update: 64

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 06/17/2019
Date Data Arrived at EDR: 06/18/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 65

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 08/20/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/12/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/19/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing
In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 06/11/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 08/15/2019
Number of Days to Update: 64

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 65

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 08/14/2019
Date Data Arrived at EDR: 08/14/2019
Date Made Active in Reports: 08/21/2019
Number of Days to Update: 7

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/11/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 43

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/08/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/10/2019
Date Data Arrived at EDR: 04/11/2019
Date Made Active in Reports: 06/20/2019
Number of Days to Update: 70

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 06/27/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 26

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 07/08/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/02/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 27

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/24/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 05/17/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/22/2019
Date Data Arrived at EDR: 05/23/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 56

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 07/26/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 02/20/2019
Date Data Arrived at EDR: 05/01/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 29

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/25/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 06/05/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 47

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 04/10/2019
Date Data Arrived at EDR: 04/11/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 19

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/19/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/24/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 63

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/06/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 07/16/2019
Number of Days to Update: 70

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/16/2019
Date Data Arrived at EDR: 05/17/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 13

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 05/30/2019
Date Data Arrived at EDR: 05/31/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 53

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/15/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/17/2019
Date Data Arrived at EDR: 01/18/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 46

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 09/12/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/16/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 63

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/08/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/15/2019
Date Data Arrived at EDR: 04/16/2019
Date Made Active in Reports: 06/21/2019
Number of Days to Update: 66

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/17/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/15/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 51

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/12/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 04/30/2012
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 42

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/25/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 07/15/2019
Date Data Arrived at EDR: 07/17/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 19

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/17/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/12/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 04/04/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/28/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 67

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/29/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 53

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 05/23/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 53

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 02/05/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 26

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 06/28/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 02/21/2019
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 14

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 9

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/25/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/09/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/09/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 04/02/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 07/16/2019
Number of Days to Update: 70

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 06/03/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/12/2019
Number of Days to Update: 69

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/12/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 18

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/12/2019
Date Made Active in Reports: 06/20/2019
Number of Days to Update: 69

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/16/2019
Next Scheduled EDR Contact: 12/30/2019
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/06/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 55

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 06/28/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/06/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 09/13/2019
Number of Days to Update: 77

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 06/28/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 48

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 07/16/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 05/31/2019
Date Data Arrived at EDR: 05/31/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 52

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 08/08/2019
Number of Days to Update: 65

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 09/04/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56
Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 04/24/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 63
Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 38
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/11/2019
Next Scheduled EDR Contact: 12/29/2019
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 08/06/2019
Date Data Arrived at EDR: 08/14/2019
Date Made Active in Reports: 08/15/2019
Number of Days to Update: 1

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/05/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 05/16/2019
Date Data Arrived at EDR: 05/23/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 56

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/21/2019
Next Scheduled EDR Contact: 12/09/2019
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/19/2019
Date Data Arrived at EDR: 05/23/2019
Date Made Active in Reports: 07/22/2019
Number of Days to Update: 60
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90
Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51
Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/14/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 47
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 06/18/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 29

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/19/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/03/2019
Date Data Arrived at EDR: 04/11/2019
Date Made Active in Reports: 04/30/2019
Number of Days to Update: 19

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/19/2019
Next Scheduled EDR Contact: 10/07/2019
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 07/15/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/03/2019
Date Data Arrived at EDR: 06/04/2019
Date Made Active in Reports: 07/23/2019
Number of Days to Update: 49

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 08/28/2019
Next Scheduled EDR Contact: 12/16/2019
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 05/20/2019
Date Data Arrived at EDR: 05/21/2019
Date Made Active in Reports: 07/18/2019
Number of Days to Update: 58

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 04/24/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 06/28/2019
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 07/19/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 05/09/2019
Date Data Arrived at EDR: 05/10/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 68

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 08/05/2019
Next Scheduled EDR Contact: 11/18/2019
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 07/31/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/26/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 63

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/22/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/07/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/26/2019
Date Data Arrived at EDR: 04/25/2019
Date Made Active in Reports: 05/30/2019
Number of Days to Update: 35
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/22/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 06/10/2019
Date Data Arrived at EDR: 06/12/2019
Date Made Active in Reports: 07/24/2019
Number of Days to Update: 42
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/09/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 06/26/2019
Date Data Arrived at EDR: 06/28/2019
Date Made Active in Reports: 07/31/2019
Number of Days to Update: 33
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 06/26/2019
Next Scheduled EDR Contact: 10/14/2019
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 05/03/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 07/16/2019
Number of Days to Update: 70
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/25/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 05/14/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 08/05/2019
Number of Days to Update: 83
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/07/2019
Next Scheduled EDR Contact: 11/25/2019
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/09/2019
Next Scheduled EDR Contact: 10/21/2019
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 05/01/2019
Date Made Active in Reports: 06/21/2019
Number of Days to Update: 51

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 07/29/2019
Next Scheduled EDR Contact: 11/11/2019
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/15/2019
Next Scheduled EDR Contact: 10/28/2019
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/16/2019
Next Scheduled EDR Contact: 12/02/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/06/2019
Next Scheduled EDR Contact: 12/23/2019
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

R.E.D. CORYDON LLC
NOT REPORTED
LAKE ELSINORE, CA 92530

TARGET PROPERTY COORDINATES

Latitude (North):	33.633585 - 33° 38' 0.91''
Longitude (West):	117.291757 - 117° 17' 30.33''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	472941.1
UTM Y (Meters):	3721374.8
Elevation:	1275 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5636473 LAKE ELSINORE, CA
Version Date:	2012
South Map:	5636487 WILDOMAR, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

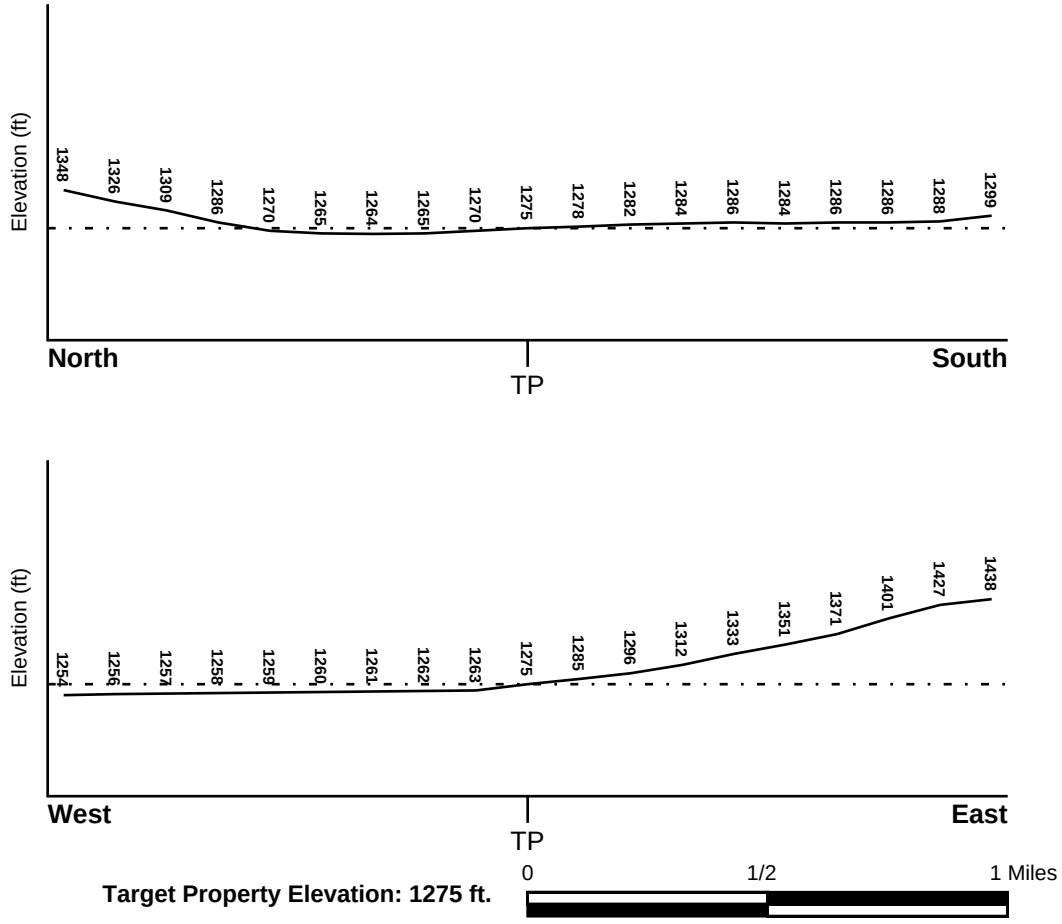
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06065C2043G	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
0602452070B	FEMA Q3 Flood data
0602452710B	FEMA Q3 Flood data
06065C2681G	FEMA FIRM Flood data
06065C2682G	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

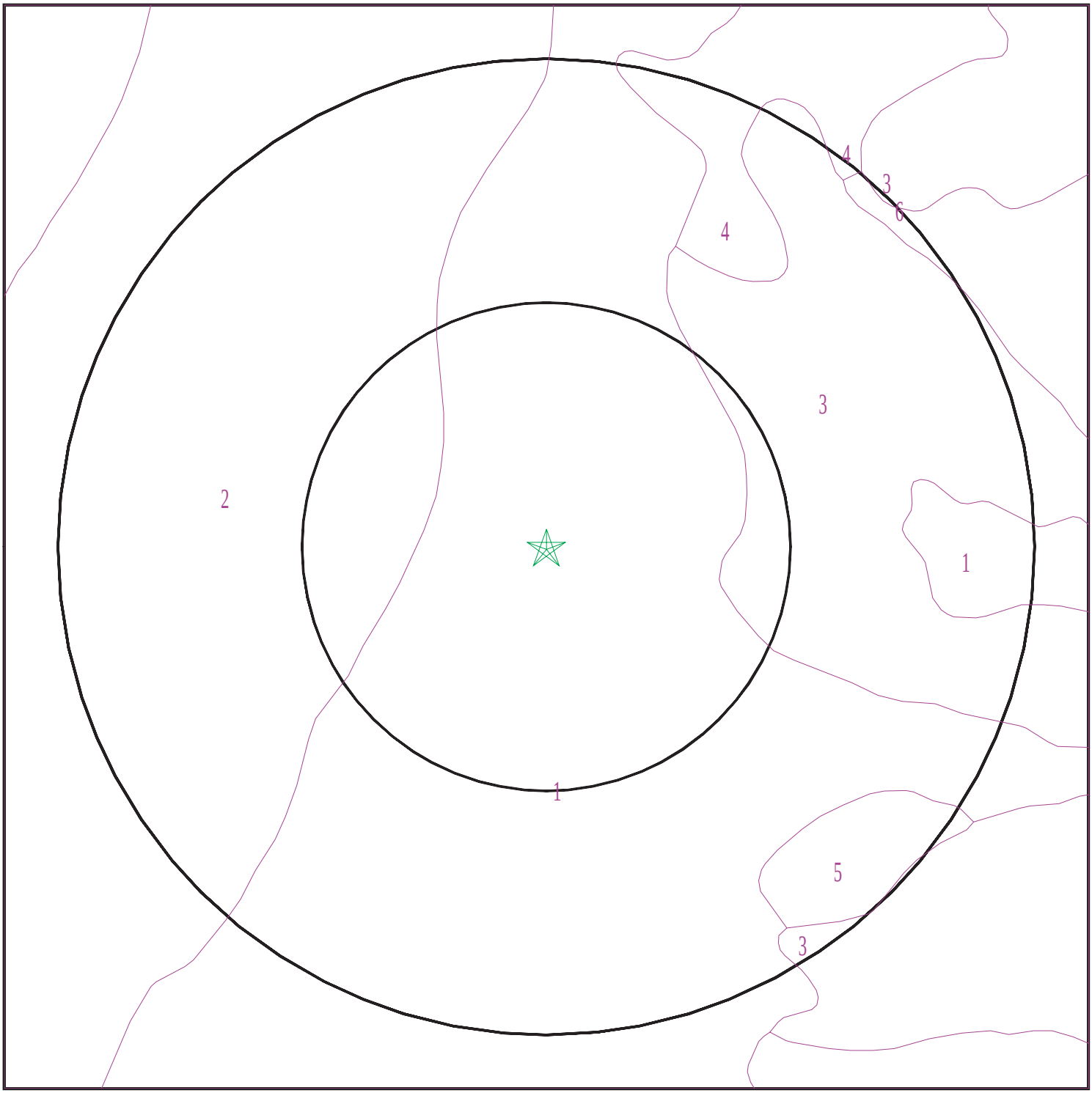
Era:	Mesozoic
System:	Cretaceous
Series:	Cretaceous granitic rocks
Code:	Kg *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 5792354.2s



SITE NAME:	R.E.D. Corydon LLC	CLIENT:	Rainwater Consulting
ADDRESS:	Not Reported Lake Elsinore CA 92530	CONTACT:	Tim Doyle
		INQUIRY #:	5792354.2s
LAT/LONG:	33.633585 / 117.291757	DATE:	September 17, 2019 12:52 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: RAMONA

Soil Surface Texture: very fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	very fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
2	14 inches	22 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
3	22 inches	68 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
4	68 inches	74 inches	gravelly sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6

Soil Map ID: 2

Soil Component Name: WAUKENA

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 9.6 Min: 7.8
2	11 inches	59 inches	sandy clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 9.6 Min: 7.8

Soil Map ID: 3

Soil Component Name: GREENFIELD

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
2	25 inches	42 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
3	42 inches	59 inches	loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6
4	59 inches	72 inches	stratified loamy sand to sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6

Soil Map ID: 4

Soil Component Name: VISALIA

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 5.6
2	18 inches	59 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 5.6

Soil Map ID: 5

Soil Component Name: RAMONA

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
2	14 inches	22 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
3	22 inches	68 inches	sandy clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
4	68 inches	74 inches	gravelly sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6

Soil Map ID: 6

Soil Component Name: HANFORD

Soil Surface Texture: coarse sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	coarse sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 5.6
2	7 inches	40 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 5.6
3	40 inches	59 inches	stratified loamy sand to coarse sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 5.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
7	USGS40000136216	1/4 - 1/2 Mile SW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

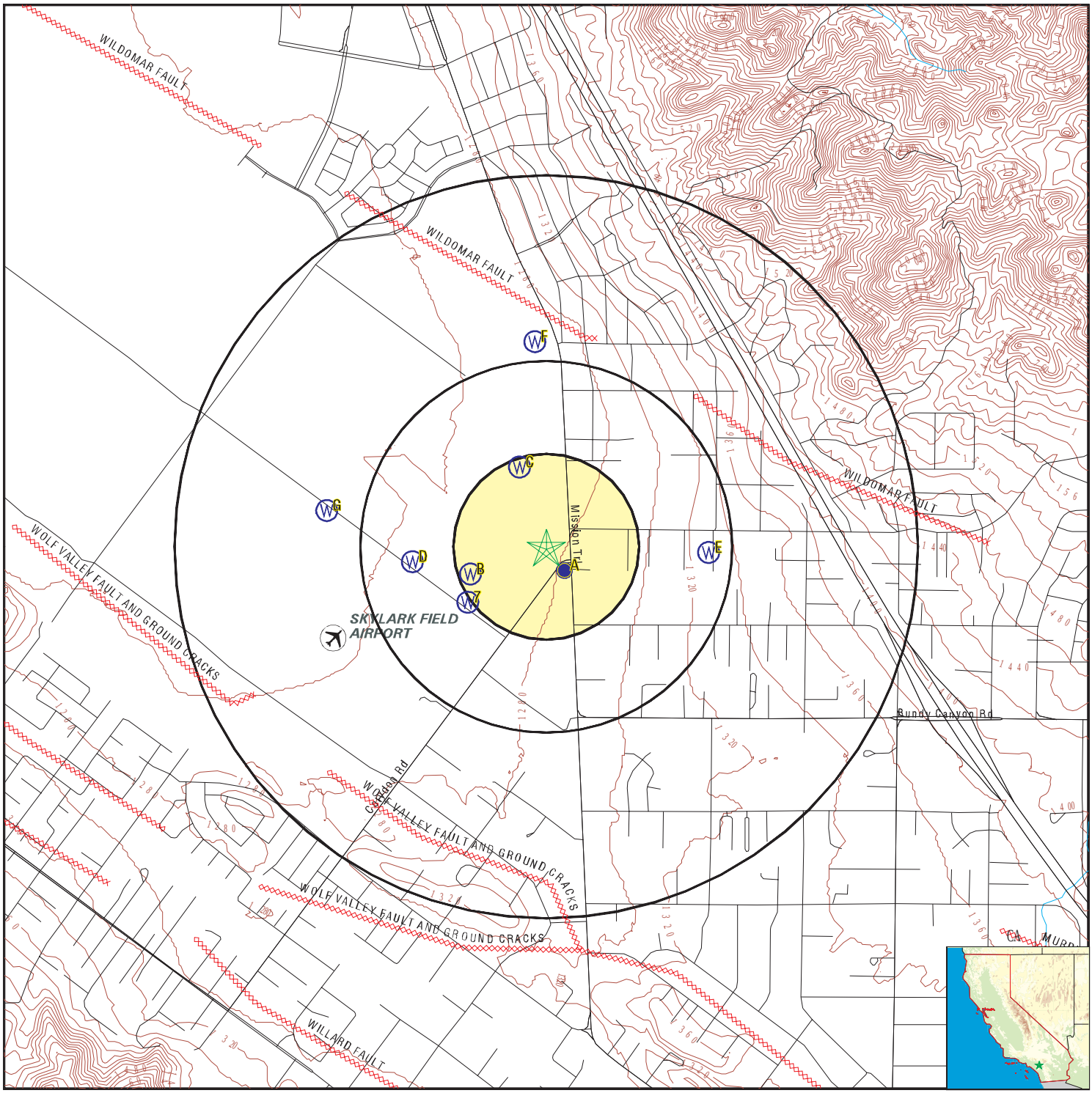
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	6950	0 - 1/8 Mile SSE
B3	CADWR8000004619	1/8 - 1/4 Mile WSW
B4	CADWR8000004620	1/8 - 1/4 Mile WSW
C5	CADWR8000004632	1/8 - 1/4 Mile NNW
C6	CADWR8000004633	1/8 - 1/4 Mile NNW
B8	6945	1/4 - 1/2 Mile WSW
D9	CADWR8000004639	1/4 - 1/2 Mile West
D10	CADWR8000004640	1/4 - 1/2 Mile West
E11	6949	1/4 - 1/2 Mile East
E12	6948	1/4 - 1/2 Mile East
E13	6947	1/4 - 1/2 Mile East
F14	CADWR8000004662	1/2 - 1 Mile North
F15	6946	1/2 - 1 Mile North
G16	CADWR8000004623	1/2 - 1 Mile West
G17	CADWR8000004624	1/2 - 1 Mile West

PHYSICAL SETTING SOURCE MAP - 5792354.2s



0 1/4 1/2 1 Miles

- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	R.E.D. Corydon LLC	CLIENT:	Rainwater Consulting
ADDRESS:	Not Reported Lake Elsinore CA 92530	CONTACT:	Tim Doyle
		INQUIRY #:	5792354.2s
LAT/LONG:	33.633585 / 117.291757	DATE:	September 17, 2019 12:51 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database: CA WELLS
EDR ID Number: 6950

A1
SSE
0 - 1/8 Mile
Higher

Seq:	6950	Prim sta c:	06S/04W-22N01 S
Frds no:	3310012007	County:	33
District:	14	User id:	WAT
System no:	3310012	Water type:	G
Source nam:	CORYDON WELL	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	333757.0	Longitude:	1171725.0
Precision:	2	Status:	AR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3310012	System nam:	ELSINORE VALLEY MWD
Hqname:	Not Reported	Address:	P.O. BOX 3000
City:	LAKE ELSINORE	State:	CA
Zip:	92531	Zip ext:	Not Reported
Pop serv:	59200	Connection:	21140
Area serve:	LAKE ELSINORE VICINITY		

Sample date:	28-FEB-18	Finding:	5.2
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		

Sample date:	23-OCT-17	Finding:	5.5
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		

Sample date:	19-JUL-17	Finding:	9.5
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		

Sample date:	15-JUN-17	Finding:	5.8
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		

Sample date:	17-NOV-16	Finding:	9.8
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		

Sample date:	25-AUG-16	Finding:	100.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		

Sample date:	25-AUG-16	Finding:	5.1
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		

Sample date:	25-AUG-16	Finding:	330.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		

Sample date:	25-AUG-16	Finding:	13.
Chemical:	MOLYDBENDUM	Report units:	UG/L
Dlr:	0.		

Sample date:	25-AUG-16	Finding:	6.1
Chemical:	LEAD	Report units:	UG/L
Dlr:	5.		
Sample date:	25-AUG-16	Finding:	1300.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	25-AUG-16	Finding:	76.
Chemical:	BARIUM	Report units:	UG/L
Dlr:	100.		
Sample date:	25-AUG-16	Finding:	7.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	25-AUG-16	Finding:	12.
Chemical:	SILICA	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	5.
Chemical:	COLOR	Report units:	UNITS
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	620.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	8.5
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	86.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	100.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	1.1
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	25-AUG-16	Finding:	61.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	17.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	4.3
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	1.6
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	90.
Chemical:	CHLORIDE	Report units:	MG/L

Dlr:	0.		
Sample date:	25-AUG-16	Finding:	46.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	25-AUG-16	Finding:	0.7
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	25-MAY-16	Finding:	7.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	06-APR-16	Finding:	5.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	06-APR-16	Finding:	1.3
Chemical:	CHLOROFORM (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	06-APR-16	Finding:	410.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	17-MAR-16	Finding:	4.2
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	06-JAN-16	Finding:	6.8
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	18-NOV-15	Finding:	7.6
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	01-OCT-15	Finding:	9.2
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	01-OCT-15	Finding:	2.1
Chemical:	CHLOROFORM (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	14-SEP-15	Finding:	8.4
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	09-SEP-15	Finding:	7.5
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	17-AUG-15	Finding:	25.
Chemical:	SOURCE TEMPERATURE C	Report units:	C
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	580.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		

Sample date:	17-AUG-15	Finding:	8.3
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	83.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	100.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	48.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	13.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	4.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	94.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	1.6
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	79.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	53.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	17-AUG-15	Finding:	0.5
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	17-AUG-15	Finding:	6.6
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	17-AUG-15	Finding:	330.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	17-AUG-15	Finding:	3.5
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	17-AUG-15	Finding:	11.7
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	08-JUL-15	Finding:	7.6
Chemical:	ARSENIC	Report units:	UG/L

Dlr:	2.		
Sample date:	10-JUN-15	Finding:	4.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	12-MAY-15	Finding:	5.2
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	23-APR-15	Finding:	0.53
Chemical:	DICHLOROMETHANE	Report units:	UG/L
Dlr:	0.5		
Sample date:	23-APR-15	Finding:	4.
Chemical:	CHLOROFORM (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	22-APR-15	Finding:	0.56
Chemical:	DICHLOROMETHANE	Report units:	UG/L
Dlr:	0.5		
Sample date:	22-APR-15	Finding:	4.2
Chemical:	CHLOROFORM (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	08-APR-15	Finding:	3.5
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	06-APR-15	Finding:	4.5
Chemical:	CHLOROFORM (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	06-APR-15	Finding:	0.56
Chemical:	DICHLOROMETHANE	Report units:	UG/L
Dlr:	0.5		
Sample date:	14-JAN-15	Finding:	3.1
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	17-DEC-14	Finding:	4.2
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	15-SEP-14	Finding:	2.3
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	23-JAN-14	Finding:	3.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	18-JUL-13	Finding:	39.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	18-JUL-13	Finding:	2.
Chemical:	BROMOCHLOROMETHANE	Report units:	UG/L
Dlr:	0.5		

Sample date:	18-JUL-13	Finding:	1.3
Chemical:	DIBROMOMETHANE	Report units:	UG/L
Dlr:	0.5		
Sample date:	18-JUL-13	Finding:	370.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	18-JUL-13	Finding:	1.7
Chemical:	DICHLOROMETHANE	Report units:	UG/L
Dlr:	0.5		
Sample date:	18-JUL-13	Finding:	4.8
Chemical:	CHLOROFORM (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	18-JUL-13	Finding:	1.1
Chemical:	DIBROMOCHLOROMETHANE (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	18-JUL-13	Finding:	2.4
Chemical:	BROMODICHLOROMETHANE (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	18-JUL-13	Finding:	170.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	18-JUL-13	Finding:	0.9
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	18-JUL-13	Finding:	90.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	18-JUL-13	Finding:	76.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	18-JUL-13	Finding:	3.2
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	18-JUL-13	Finding:	67.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	18-JUL-13	Finding:	15.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	18-JUL-13	Finding:	160.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	18-JUL-13	Finding:	110.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	18-JUL-13	Finding:	90.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L

Dlr:	0.		
Sample date:	18-JUL-13	Finding:	8.
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	18-JUL-13	Finding:	650.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	15-JAN-13	Finding:	330.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	18-OCT-12	Finding:	360.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	70.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	07-AUG-12	Finding:	0.8
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	07-AUG-12	Finding:	5.
Chemical:	COLOR	Report units:	UNITS
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	720.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	8.2
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	4.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	07-AUG-12	Finding:	89.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	110.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	130.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	32.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	11.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		

Sample date:	07-AUG-12	Finding:	74.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	7.6
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	07-AUG-12	Finding:	3.8
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	07-AUG-12	Finding:	0.28
Chemical:	LANGELIER INDEX AT SOURCE TEMP.	Report units:	Not Reported
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	410.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	27.
Chemical:	MANGANESE	Report units:	UG/L
Dlr:	20.		
Sample date:	07-AUG-12	Finding:	1400.
Chemical:	IRON	Report units:	UG/L
Dlr:	100.		
Sample date:	07-AUG-12	Finding:	120.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	07-AUG-12	Finding:	2.8
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	07-AUG-12	Finding:	100.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		

A2
SE
0 - 1/8 Mile
Higher

AQUIFLOW **67283**

Site ID:	083302003T
Groundwater Flow:	Not Reported
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	150
Date:	10/29/1993

B3
WSW
1/8 - 1/4 Mile
Lower

CA WELLS **CADWR8000004619**

State Well #:	Not Reported	Station ID:	47933
Well Name:	MW#2 Shallow	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	485	Basin Name:	Elsinore Valley

Well Completion Rpt #: 779945

B4
WSW **CA WELLS** **CADWR8000004620**
1/8 - 1/4 Mile
Lower

State Well #:	Not Reported	Station ID:	47934
Well Name:	MW#2 Deep	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	700	Basin Name:	Elsinore Valley
Well Completion Rpt #:	779945		

C5
NNW **CA WELLS** **CADWR8000004632**
1/8 - 1/4 Mile
Lower

State Well #:	Not Reported	Station ID:	47937
Well Name:	MW#4 Shallow	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	0	Basin Name:	Elsinore Valley
Well Completion Rpt #:	Not Reported		

C6
NNW **CA WELLS** **CADWR8000004633**
1/8 - 1/4 Mile
Lower

State Well #:	Not Reported	Station ID:	47938
Well Name:	MW#4 Deep	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	0	Basin Name:	Elsinore Valley
Well Completion Rpt #:	Not Reported		

7
SW **FED USGS** **USGS40000136216**
1/4 - 1/2 Mile
Lower

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	006S004W21J003S	Type:	Well
Description:	Not Reported	HUC:	Not Reported
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Unconfined single aquifer
Construction Date:	19860408	Well Depth:	1430
Well Depth Units:	ft	Well Hole Depth:	1450
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements: 1 Level reading date: 2001-02-15

Feet below surface:	348	Feet to sea level:	Not Reported
Note:	Not Reported		

B8
WSW **CA WELLS 6945**
1/4 - 1/2 Mile
Lower

Seq:	6945	Prim sta c:	06S/04W-21J03 S
Frds no:	3310012004	County:	33
District:	14	User id:	WAT
System no:	3310012	Water type:	G
Source nam:	CEREAL STREET WELL	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	333755.0	Longitude:	1171742.0
Precision:	2	Status:	AR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3310012	System nam:	ELSINORE VALLEY MWD
Hqname:	Not Reported	Address:	P.O. BOX 3000
City:	LAKE ELSINORE	State:	CA
Zip:	92531	Zip ext:	Not Reported
Pop serv:	59200	Connection:	21140
Area serve:	LAKE ELSINORE VICINITY		

Sample date:	07-SEP-16	Finding:	3.5
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		

Sample date:	25-AUG-16	Finding:	2.
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		

Sample date:	25-AUG-16	Finding:	0.3
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dlr:	0.		

Sample date:	25-AUG-16	Finding:	1.88
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		

Sample date:	25-AUG-16	Finding:	0.727
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		

Sample date:	25-AUG-16	Finding:	1.76
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		

Sample date:	25-AUG-16	Finding:	3.
Chemical:	COLOR	Report units:	UNITS
Dlr:	0.		

Sample date:	25-AUG-16	Finding:	750.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		

Sample date:	25-AUG-16	Finding:	8.3
Chemical:	PH, LABORATORY	Report units:	Not Reported

Dlr:	0.		
Sample date:	25-AUG-16	Finding:	90.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	110.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	0.71
Chemical:	NITRATE (AS N)	Report units:	MG/L
Dlr:	0.4		
Sample date:	25-AUG-16	Finding:	82.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	25.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	4.6
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	110.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	120.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	67.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	25-AUG-16	Finding:	0.8
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	25-AUG-16	Finding:	12.
Chemical:	SILICA	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	72.
Chemical:	BARIUM	Report units:	UG/L
Dlr:	100.		
Sample date:	25-AUG-16	Finding:	120.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	25-AUG-16	Finding:	17.
Chemical:	MOLYDBENDUM	Report units:	UG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	1.6
Chemical:	CHLOROFORM (THM)	Report units:	UG/L
Dlr:	1.		

Sample date:	25-AUG-16	Finding:	380.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	25-AUG-16	Finding:	0.35
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU
Dlr:	0.1		
Sample date:	19-AUG-16	Finding:	4.9
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	28-JUL-16	Finding:	8.8
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	25-MAY-16	Finding:	4.3
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	06-APR-16	Finding:	510.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	06-APR-16	Finding:	3.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	06-JAN-16	Finding:	2.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	17-DEC-15	Finding:	6.6
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	18-NOV-15	Finding:	5.8
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	24-AUG-15	Finding:	5.5
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	12.2
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	2.5
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	24-AUG-15	Finding:	0.41
Chemical:	LANGELIER INDEX AT SOURCE TEMP.	Report units:	Not Reported
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	330.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	8.1
Chemical:	ARSENIC	Report units:	UG/L

Dlr:	2.		
Sample date:	24-AUG-15	Finding:	25.
Chemical:	SOURCE TEMPERATURE C	Report units:	C
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	660.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	8.4
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	100.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	130.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	80.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	23.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	94.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	1.8
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	88.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	24-AUG-15	Finding:	53.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	24-AUG-15	Finding:	0.5
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	10-JUN-15	Finding:	8.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	12-MAY-15	Finding:	9.6
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	08-APR-15	Finding:	8.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		

Sample date:	19-FEB-15	Finding:	7.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	14-JAN-15	Finding:	6.2
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	13-OCT-14	Finding:	8.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	15-SEP-14	Finding:	6.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	05-AUG-14	Finding:	4.1
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	11.7
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	2.2
Chemical:	NITRATE (AS NO3)	Report units:	MG/L
Dlr:	2.		
Sample date:	05-AUG-14	Finding:	340.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	600.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	8.2
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	90.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	110.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	56.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	15.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	100.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	1.7
Chemical:	POTASSIUM	Report units:	MG/L

Dlr:	0.		
Sample date:	05-AUG-14	Finding:	88.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	05-AUG-14	Finding:	60.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	05-AUG-14	Finding:	0.5
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	05-AUG-14	Finding:	4.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	05-AUG-14	Finding:	110.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	14-JUL-14	Finding:	4.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	10-JUN-14	Finding:	4.3
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	08-MAY-14	Finding:	3.7
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	15-APR-14	Finding:	2.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	23-JAN-14	Finding:	5.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	10-DEC-13	Finding:	4.3
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	19-SEP-13	Finding:	8.3
Chemical:	PH, LABORATORY	Report units:	Not Reported
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	88.
Chemical:	ALKALINITY (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	110.
Chemical:	BICARBONATE ALKALINITY	Report units:	MG/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	100.
Chemical:	NITRITE (AS N)	Report units:	MG/L
Dlr:	0.4		

Sample date:	19-SEP-13	Finding:	120.
Chemical:	HARDNESS (TOTAL) AS CACO3	Report units:	MG/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	29.
Chemical:	CALCIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	11.
Chemical:	MAGNESIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	69.
Chemical:	SODIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	2.5
Chemical:	POTASSIUM	Report units:	MG/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	73.
Chemical:	CHLORIDE	Report units:	MG/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	71.
Chemical:	SULFATE	Report units:	MG/L
Dlr:	0.5		
Sample date:	19-SEP-13	Finding:	1.1
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)	Report units:	MG/L
Dlr:	0.1		
Sample date:	19-SEP-13	Finding:	4.4
Chemical:	ARSENIC	Report units:	UG/L
Dlr:	2.		
Sample date:	19-SEP-13	Finding:	140.
Chemical:	BORON	Report units:	UG/L
Dlr:	100.		
Sample date:	19-SEP-13	Finding:	5.2
Chemical:	SELENIUM	Report units:	UG/L
Dlr:	5.		
Sample date:	19-SEP-13	Finding:	2.9
Chemical:	BROMODICHLOROMETHANE (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	19-SEP-13	Finding:	5.2
Chemical:	CHLOROFORM (THM)	Report units:	UG/L
Dlr:	1.		
Sample date:	19-SEP-13	Finding:	290.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	0.37
Chemical:	LANGELIER INDEX AT SOURCE TEMP.	Report units:	Not Reported
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	0.43
Chemical:	TURBIDITY, LABORATORY	Report units:	NTU

Dlr:	0.1		
Sample date:	19-SEP-13	Finding:	12.1
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)	Report units:	Not Reported
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	5.78
Chemical:	GROSS ALPHA	Report units:	PCI/L
Dlr:	3.		
Sample date:	19-SEP-13	Finding:	2.2
Chemical:	GROSS ALPHA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	1.39
Chemical:	GROSS BETA COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	84.3
Chemical:	TRITIUM	Report units:	PCI/L
Dlr:	1000.		
Sample date:	19-SEP-13	Finding:	269.
Chemical:	TRITIUM COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	0.497
Chemical:	RADIUM 228 COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	0.201
Chemical:	STRONTIUM - 90 COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	0.781
Chemical:	URANIUM COUNTING ERROR	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	1.16
Chemical:	GROSS ALPHA MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	0.363
Chemical:	URANIUM MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	0.2
Chemical:	RADIUM 228 MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	1.27
Chemical:	GROSS BETA MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	0.606
Chemical:	STRONTIUM - 90 MDA95	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	434.
Chemical:	TRITIUM MDA95	Report units:	PCI/L
Dlr:	0.		

Sample date:	19-SEP-13	Finding:	4.e-002
Chemical:	RA-226 FOR CWS OR TOTAL RA FOR NTNC BY 903.0		
Report units:	PCI/L	Dlr:	0.
Sample date:	19-SEP-13	Finding:	0.136
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.	Report units:	PCI/L
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	0.36
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Report units:	PCI/L	Dlr:	0.
Sample date:	19-SEP-13	Finding:	25.
Chemical:	SOURCE TEMPERATURE C	Report units:	C
Dlr:	0.		
Sample date:	19-SEP-13	Finding:	580.
Chemical:	SPECIFIC CONDUCTANCE	Report units:	US
Dlr:	0.		
Sample date:	18-OCT-12	Finding:	370.
Chemical:	TOTAL DISSOLVED SOLIDS	Report units:	MG/L
Dlr:	0.		

D9
West
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR8000004639**

State Well #:	Not Reported	Station ID:	47931
Well Name:	MW#1 Shallow	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	435	Basin Name:	Elsinore Valley
Well Completion Rpt #:	779941		

D10
West
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR8000004640**

State Well #:	Not Reported	Station ID:	47932
Well Name:	MW#1 Deep	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	698	Basin Name:	Elsinore Valley
Well Completion Rpt #:	779941		

E11
East
1/4 - 1/2 Mile
Higher

CA WELLS **6949**

Seq:	6949	Prim sta c:	06S/04W-22M07 S
Frds no:	3310012017	County:	33
District:	14	User id:	WAT
System no:	3310012	Water type:	G
Source nam:	SEDCO 02 - INACTIVE	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	333800.0	Longitude:	1171700.0

Precision:	8	Status:	IR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		
System no:	3310012	System nam:	ELSINORE VALLEY MWD
Hqname:	Not Reported	Address:	P.O. BOX 3000
City:	LAKE ELSINORE	State:	CA
Zip:	92531	Zip ext:	Not Reported
Pop serv:	59200	Connection:	21140
Area serve:	LAKE ELSINORE VICINITY		

E12
East
1/4 - 1/2 Mile
Higher

CA WELLS 6948

Seq:	6948	Prim sta c:	06S/04W-22M06 S
Frds no:	3310012016	County:	33
District:	14	User id:	WAT
System no:	3310012	Water type:	G
Source nam:	SEDCO 01 - INACTIVE	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	333800.0	Longitude:	1171700.0
Precision:	8	Status:	IR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		
System no:	3310012	System nam:	ELSINORE VALLEY MWD
Hqname:	Not Reported	Address:	P.O. BOX 3000
City:	LAKE ELSINORE	State:	CA
Zip:	92531	Zip ext:	Not Reported
Pop serv:	59200	Connection:	21140
Area serve:	LAKE ELSINORE VICINITY		

E13
East
1/4 - 1/2 Mile
Higher

CA WELLS 6947

Seq:	6947	Prim sta c:	06S/04W-22M05 S
Frds no:	3310012018	County:	33
District:	14	User id:	WAT
System no:	3310012	Water type:	G
Source nam:	SEDCO 03 - INACTIVE	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	333800.0	Longitude:	1171700.0
Precision:	8	Status:	IR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		
System no:	3310012	System nam:	ELSINORE VALLEY MWD
Hqname:	Not Reported	Address:	P.O. BOX 3000
City:	LAKE ELSINORE	State:	CA
Zip:	92531	Zip ext:	Not Reported
Pop serv:	59200	Connection:	21140
Area serve:	LAKE ELSINORE VICINITY		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

F14
North
1/2 - 1 Mile
Lower

CA WELLS **CADWR8000004662**

State Well #:	06S04W22D002S	Station ID:	47925
Well Name:	Olive St Well	Well Use:	Observation
Well Type:	Single Well	Well Depth:	720
Basin Name:	Elsinore Valley	Well Completion Rpt #:	151478

F15
North
1/2 - 1 Mile
Lower

CA WELLS **6946**

Seq:	6946	Prim sta c:	06S/04W-22D02 S
Frds no:	3310012013	County:	33
District:	14	User id:	WAT
System no:	3310012	Water type:	G
Source nam:	OLIVE ST.	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	333830.0	Longitude:	1171730.0
Precision:	2	Status:	AR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	3310012	System nam:	ELSINORE VALLEY MWD
Hqname:	Not Reported	Address:	P.O. BOX 3000
City:	LAKE ELSINORE	State:	CA
Zip:	92531	Zip ext:	Not Reported
Pop serv:	59200	Connection:	21140
Area serve:	LAKE ELSINORE VICINITY		

G16
West
1/2 - 1 Mile
Lower

CA WELLS **CADWR8000004623**

State Well #:	Not Reported	Station ID:	47935
Well Name:	MW#3 Shallow	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	0	Basin Name:	Elsinore Valley
Well Completion Rpt #:	Not Reported		

G17
West
1/2 - 1 Mile
Lower

CA WELLS **CADWR8000004624**

State Well #:	Not Reported	Station ID:	47936
Well Name:	MW#3 Deep	Well Use:	Observation
Well Type:	Part of a nested/multi-completion well		
Well Depth:	0	Basin Name:	Elsinore Valley
Well Completion Rpt #:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
1G **SE** **0 - 1/8 Mile** **Lower**	Site ID:	083302003T	**AQUIFLOW**	**67283**
	Groundwater Flow:	Not Reported		
	Shallow Water Depth:	Not Reported		
	Deep Water Depth:	Not Reported		
	Average Water Depth:	150		
	Date:	10/29/1993		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92530	6	0

Federal EPA Radon Zone for RIVERSIDE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for RIVERSIDE COUNTY, CA

Number of sites tested: 12

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.117 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.450 pCi/L	100%	0%	0%
Basement	1.700 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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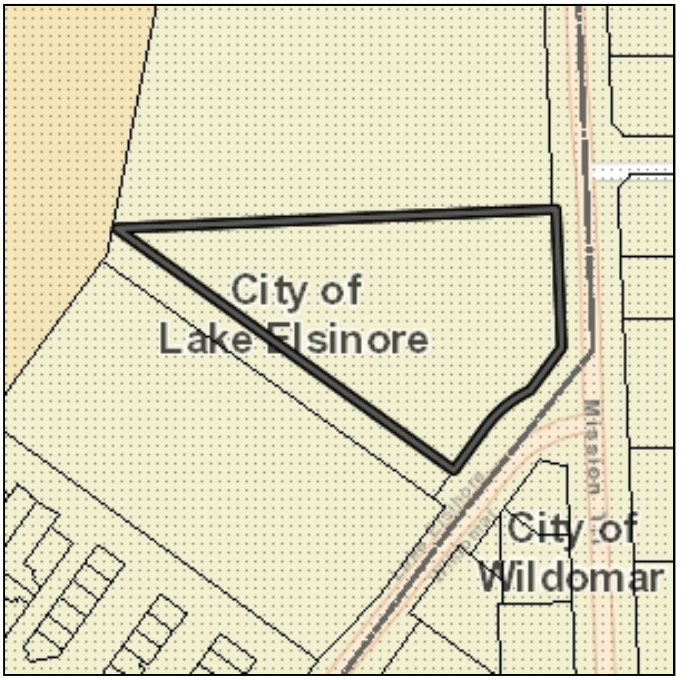
APPENDIX

D

Riverside County Parcel Report

APN(s) 370-050-026

MAPS/IMAGES



PARCEL

APN	370-050-026-3
Previous APN	370-050-026 came from 000-000-000
Owners	Not Available Online
Address	370-050-026 NOT AVAILABLE
Mailing Address	370-050-026 26500 W AGOURA RD NO 211 CALABASAS CA 91302
Legal Description	370-050-026 Recorded Book/Page: RS 73/44 Subdivision Name: Lot/Parcel: 4 Block: Tract Number: 0
Lot Size	370-050-026 4.26
Property Characteristics	370-050-026 Year Constructed: Baths: 0.00 Bedrooms: 0

Construction Type: SPECIAL
Garage Type: CONSTRUCTION
Property Area (sq ft): 0
Roof Type: UNKNOWN
Stories:
Pool: NO
Central Cool: NO
Central Heat: NO

Supervisorial District	KEVIN JEFFRIES, DISTRICT 1
Township/Range	T6SR4W SEC 21 PSEC T6SR4W SEC 22 PSEC
Elevation Range (ft.)	MIN: 1264, AVG: 1272, MAX: 1280
Thomas Bros. Maps Page/Grid	PAGE: 896, GRID: J3 PAGE: 897, GRID: A3
Indian Tribal Land	NOT IN A TRIBAL LAND
City Boundary	LAKE ELSINORE
City Spheres of Influence	NOT IN A CITY SPHERE
LAFCO Annexation	N/A
Proposals	PROPOSED_CITY
March Joint Powers Authority	NOT A THE JURSIDICTION OF THE MARCH POWERS AUTHORITY
County Service Area	

County Service Area	NOT IN A COUNTY SERVICE AREA

PLANNING more...

Specific Plans	NOT IN A SPECIFIC PLAN
Land Use Designations	CITY
General Plan Policy Overlays	NOT IN A GENERAL PLAN POLICY OVERLAY
Area Plan (RCIP)	Elsinore
General Plan Policy Areas	NOT IN A GENERAL PLAN POLICY AREA
Zoning Classifications (ORD. 348)	CONTACT THE CITY FOR MORE INFORMATION
Zoning Overlays	NOT IN A ZONING OVERLAY
Historical Preservation Districts	NOT IN A HISTORIC PRESERVATION DISTRICT
Agricultural Preserve	NOT IN AN AGRICULTURAL PRESERVE
Airport Influence Areas	SKYLARK
Airport Compatibility Zones	NOT IN AN AIRPORT COMPATIBILITY AREA
Zoning Districts/Areas	NOT IN A ZONING DISTRICT/AREA
Community Advisory Councils	NOT IN A COMMUNITY ADVISORY COUNCIL
Residential Permit Statistics	N/A Expected Units: BRS Permit Units: Final Issued Active Current Permits: Cumulative Total: % of Expected:

ENVIRONMENTAL more...

CVMSHCP (Coachella Valley Multi-Species Habitat Conservation Plan) Plan Area	NOT IN A COACHELLA VALLEY MSHCP FEE AREA
CVMSHCP (Coachella Valley Multi-Species Habitat Conservation Plan) Conservation Area	NOT COACHELLA VALLEY CONSERVATION AREA
CVMSHCP Fluvial Sand Transport Special Provision Areas	NOT IN A FLUVIAL SAND TRANSPORT SPECIAL PROVISION AREA
WRMSHCP (Western Riverside County Multi-Species Habitat Conservation Plan) Plan Area	WESTERN RIVERSIDE COUNTY
WRMSHCP (Western Riverside County Multi-Species Habitat Conservation Plan) Cell Group	NOT IN A CELL GROUP
WRMSHCP Cell Number	5131
HANS/ERP (Habitat Acquisition and Negotiation Strategy/Expedited Review Process)	Project: NOT IN A PROJECT Conserve: Status: Notes: Intake Num: LMS Case:
Vegetation (2005)	Agriculture Mapping Unit

FIRE

Fire Hazard Classification (Ord. 787)	NOT IN A FIRE HAZARD ZONE
Fire Responsibility Area	NOT IN A FIRE RESPONSIBILITY AREA

DEVELOPMENT FEES

CVMSHCP (Coachella Valley Multi-Species Habitat Conservation Plan) Fee Area (Ord 875)	NOT IN A COACHELLA VALLEY MSHCP FEE AREA
WRMSHCP (Western Riverside County Multi-Species Habitat Conservation Plan) Fee Area (Ord 810)	WESTERN RIVERSIDE COUNTY
Western TUMF (Transportation Uniform Mitigation Fee Ord. 824)	SOUTHWEST
Eastern TUMF (Transportation Uniform Mitigation Fee Ord. 673)	NOT IN THE EASTERN TUMF FEE AREA
Road & Bridge Benefit District	NOT IN A ROAD BRIDGE BENEFIT DISTRICT
DIF (Development Impact Fee Area Ord. 659)	ELSINORE, AREA 15
SKR Fee Area (Stephen's Kagaroo Rat Ord. 663.10)	IN OR PARTIALLY WITHIN THE SKR FEE AREA
Development Agreements	AGREEMENT: NOT IN A AMENDMENT: DEVELOPMENT EXPIRATION DATE: AGREEMENT

EXPIRATION DATE: AGREEMENT	

TRANSPORTATION more...

Circulation Element Ultimate Right-of-Way	IN OR PARTIALLY WITHIN A CIRCULATION ELEMENT RIGHT-OF-WAY
Road Book Page	73
Transportation Agreements	NOT IN A TRANS AGREEMENT
CETAP (Community and Environmental Transportation Acceptability Process) Corridors	NOT IN A CETAP CORRIDOR

HYDROLOGY

Flood Plain Review	*MAYBE REQUIRED, CONTACT RIVERSIDE COUNTY FLOOD CONTROL TO VERIFY OUTSIDE FLOODPLAIN, REVIEW NOT REQUIRED
Flood Control District	RIVERSIDE COUNTY FLOOD CONTROL
Watershed	SAN JACINTO VALLEY
Water District	WESTERN MUNICIPAL WATER DISTRICT

GEOLOGIC

Fault Zone	NOT IN A FAULT ZONE
Faults	NOT IN A FAULT LINE
Liquefaction Potential	Moderate
Subsidence	Susceptible
Paleontological Sensitivity	LOW POTENTIAL (L): FOLLOWING A LITERATURE SEARCH, RECORDS CHECK AND A FIELD SURVEY, AREAS MAY BE DETERMINED BY A QUALIFIED VERTEBRATE PALEONTOLOGIST AS HAVING LOW POTENTIAL FOR CONTAINING SIGNIFICANT PALEONTOLOGICAL RESOURCES SUBJECT TO ADVERSE IMPACTS.

MISCELLANEOUS

School Districts	LAKE ELSINORE UNIFIED
Communities	LAKE ELSINORE
Lighting (Ord. 655)	ZONE: B
2010 Census Tract	430.01
Farmland	LOCAL IMPORTANCE
Special Notes	NO SPECIAL NOTES
Tax Rate Area & District Name	005026 - CITY OF LAKE ELSINORE ANX

District Name	005026 - CO FREE LIBRARY 005026 - CO STRUCTURE FIRE PROTECTION 005026 - CSA 152 005026 - ELS MURRIETA ANZA RESOURCE 005026 - ELSINORE AREA ELEM SCHOOL 005026 - ELSINORE VALLEY CEMETERY 005026 - ELSINORE VALLEY MUNICIPAL 005026 - FLOOD CONTROL ADMIN 005026 - FLOOD CONTROL ZN 3 005026 - GENERAL 005026 - GENERAL PURPOSE 005026 - LAKE ELSINORE UNI IMP NO 96-1 005026 - LAKE ELSINORE UNIFIED 005026 - MT SAN JACINTO JR COLLEGE 005026 - MWD WEST 1302999 005026 - NW MOSQUITO & VECTOR CNTL 005026 - RDV RANCHO LAGUNA 2 005026 - RIV CO REGIONAL PARK & OPEN SP 005026 - RIVERSIDE CO OFC OF EDUCATION 005026 - SO. CALIF,JT(19,30,33,36,37,56) 005026 - WESTERN MUNICIPAL WATER

PLUS PERMITS & CASES

Administrative Cases

Case	Case Description	Status
N/A	N/A	N/A

Building and Safety Cases

Case	Case Description	Status
N/A	N/A	N/A

Code Cases

Case	Case Description	Status
N/A	N/A	N/A

Fire Cases

Case	Case Description	Status
N/A	N/A	N/A

Planning Cases

Case	Case Description	Status
N/A	N/A	N/A

Survey Cases

Case	Case Description	Status
N/A	N/A	N/A

Transportation Cases

Case	Case Description	Status
N/A	N/A	N/A

DEPARTMENT of ENVIRONMENTAL HEALTH PERMITS

Septic Permits

Record Id	Application Date	Plan Check Approved Date	Final Inspection Date	Approved Date
N/A	N/A	N/A	N/A	N/A

Well Water Permits

Record Id	PE	Permit Paid Date	Permit Approved Date	Well Finaled Date
N/A	N/A	N/A	N/A	N/A

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R.E.D. Corydon LLC

Not Reported

Lake Elsinore, CA 92530

Inquiry Number: 5792354.3

September 17, 2019

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

09/17/19

Site Name:

R.E.D. Corydon LLC
Not Reported
Lake Elsinore, CA 92530
EDR Inquiry # 5792354.3

Client Name:

Rainwater Consulting
24051 Golden Pheasant Lane
Murrieta, CA 92562
Contact: Tim Doyle

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Certified Sanborn Results:

Certification # BBD9-4C8B-A3CB

PO # 09172019

Project P192846-60A

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Sanborn® Library search results

Certification #: BBD9-4C8B-A3CB

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- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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First American	ALTA Commitment for Title Insurance
Commitment	ISSUED BY **First American Title Insurance Company** File No: NCS-961757-ONT1

COMMITMENT FOR TITLE INSURANCE

Issued By

FIRST AMERICAN TITLE INSURANCE COMPANY

NOTICE

IMPORTANT-READ CAREFULLY: THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACONTRACTUAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY'S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON.

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and the Commitment Conditions, ***First American Title Insurance Company***, a Nebraska Corporation (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured.

If all of the Schedule B, Part I-Requirements have not been met within six months after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

First American Title Insurance Company

Dennis J. Gilmore
President

Jeffrey S. Robinson
Secretary

If this jacket was created electronically, it constitutes an original document.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions.

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COMMITMENT CONDITIONS

1. DEFINITIONS

(a) "Knowledge" or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.
(b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.
(c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.
(d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.
(e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.
(f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.
(g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.
(h) "Title": The estate or interest described in Schedule A.

2. If all of the Schedule B, Part I—Requirements have not been met within the time period specified in the Commitment to Issue Policy, this Commitment terminates and the Company's liability and obligation end.

3. The Company's liability and obligation is limited by and this Commitment is not valid without:
(a) the Notice;
(b) the Commitment to Issue Policy;
(c) the Commitment Conditions;
(d) Schedule A;
(e) Schedule B, Part I—Requirements; and
(f) Schedule B, Part II—Exceptions.

4. COMPANY'S RIGHT TO AMEND

The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

5. LIMITATIONS OF LIABILITY

(a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:
  (i) comply with the Schedule B, Part I—Requirements;
  (ii) eliminate, with the Company's written consent, any Schedule B, Part II—Exceptions; or
  (iii) acquire the Title or create the Mortgage covered by this Commitment.
(b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.
(c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.
(d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.
(e) The Company shall not be liable for the content of the Transaction Identification Data, if any.
(f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I—Requirements have been met to the satisfaction of the Company.
(g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

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6. LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT

(a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
(b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.
(c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
(d) The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
(e) Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
(f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT

The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. PRO-FORMA POLICY

The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. ARBITRATION

Arbitration provision intentionally removed.

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Transaction Identification Data for reference only:

Issuing Agent: First American Title Insurance Company National Commercial Services
Commitment No.: NCS-961757-ONT1
Property Address: , Lake Elsinore, CA
Revision No.: 1 - 7/25/2019 (deletion of Exceptions 9, 10, 13 and 19)

Issuing Office: 3281 E Guasti Road, Suite 440, Ontario, CA 91761
Issuing Office File No.: NCS-961757-ONT1
Escrow Officer/Assistant: /
Phone: /
Email: /
Title Officer/Assistant: Greg Franke/Erin West
Phone: (909)510-6200/(909)510-6215
Email: gfranke@firstam.com/ewest@firstam.com

SCHEDULE A

1. Commitment Date: May 10, 2019 at 8:00 AM
2. Policy to be issued:

   (a) ☒ 2006 ALTA® Standard Owner Policy
   Proposed Insured: To Be Determined
   Proposed Policy Amount: $ To Be Determined

   (b) ☒ 2006 ALTA® Extended Loan Policy
   Proposed Insured: To Be Determined
   Proposed Policy Amount: $ To Be Determined

   (c) ☐ 2006 ALTA® Policy
   Proposed Insured:
   Proposed Policy Amount: $

3. The estate or interest in the Land described or referred to in this Commitment is

   FEE

4. The Title is, at the Commitment Date, vested in:

   The Development at Mission Trails - Lake Elsinore, LLC, a California limited liability company

5. The Land is described as follows:

   See Exhibit "A" attached hereto and made a part hereof

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Commitment No.: NCS-961757-ONT1

SCHEDULE B, PART I

Requirements

All of the following Requirements must be met:

A. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

B. Pay the agreed amount for the estate or interest to be insured.

C. Pay the premiums, fees, and charges for the Policy to the Company.

D. Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.

E. Releases(s) or Reconveyance(s) of Item(s): None

F. Other: None

G. You must give us the following information:
   a. Any off record leases, surveys, etc.
   b. Statement(s) of Identity, all parties.
   c. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] H. Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by the company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] I. An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions.

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[X] J. The following LLC documentation is required from:

(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] K. The following partnership documentation is required **:**

(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] L. The following corporation documentation is required:

(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[X] M. Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:
Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] N. A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] O. Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] P. Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] Q. The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

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[] R. Financial statements from the appropriate parties must be submitted to the Company for review.

[] S. A copy of the construction contract must be submitted to the Company for review.

[] T. An inspection of the Land must be performed by the Company for verification of the phase of construction.

[] U. The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

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Commitment No.: NCS-961757-ONT1

SCHEDULE B, PART II

Exceptions

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company:

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I-Requirements are met.

2. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

3. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

4. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

5. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

6. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

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7. General and special taxes and assessments for the fiscal year 2019-2020, a lien not yet due or payable.

8. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

9. This item has been intentionally deleted.

10. This item has been intentionally deleted.

11. An easement for sanitary sewer and incidental purposes in the document recorded October 24, 1985 as Instrument No. 85-239660 of Official Records.

    (Affects Parcel A)

12. The terms and provisions contained in the document entitled "Acceptance of Drainage Waters" recorded May 13, 1986 as Instrument No. 86-109491 of Official Records.

    Document(s) declaring modifications thereof recorded May 15, 1986 as Instrument No. 86-112387 of Official Records.

13. This item has been intentionally deleted.

14. An easement for public road and drainage and incidental purposes in the document recorded July 07, 2000 as Instrument No. 00-263480 of Official Records.

    (Affects Parcel B)

15. An easement for utilities and incidental purposes in the document recorded April 13, 2001 as Instrument No. 01-155718 of Official Records.

    (Affects Parcel B)

16. The terms and provisions contained in the document entitled "Joint Use Agreement" recorded May 08, 2001 as Instrument No. 01-200748 of Official Records.

17. Water rights, claims or title to water, whether or not shown by the public records.

18. Rights of the public in and to that portion of the land lying within Mission Trail and Corydon Street.

    (Affects Parcel A)

19. This item has been intentionally deleted.

20. Rights of parties in possession.

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ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. Taxes for proration purposes only for the fiscal year 2018-2019.

First Installment:	$4,681.68, PAID
Second Installment:	$4,681.68, PAID
Tax Rate Area:	005-026
APN:	370-050-026-3

   (Affects Parcel A)

2. Taxes for proration purposes only for the fiscal year 2018-2019.

First Installment:	$9,389.06, PAID
Second Installment:	$9,389.06, PAID
Tax Rate Area:	005-026
APN:	370-050-030-6

   The amount(s) must be verified prior to close of escrow.

   (Affects Parcel B)

3. The property covered by this report is vacant land.

4. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

5. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted thereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of this Commitment or the Policy, if any, to which the map is attached.

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Exhibit A

File No.: NCS-961757-ONT1

The Land referred to herein below is situated in the City of Lake Elsinore, County of Riverside, State of California, and is described as follows:

PARCEL A:

THAT PORTION OF LOTS 1 AND 4-A AS SHOWN ON AMENDED MAP OF A PORTION OF SEDCO TRACT NO. 28, IN THE CITY OF LAKE ELSINORE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 19 PAGE(S) 37 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, TOGETHER WITH THAT PORTION OF THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY RIGHT OF WAY PER DEED RECORDED APRIL 8, 1921 IN BOOK 543 PAGE 259 OF DEEDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE NORTHWESTERLY RIGHT OF WAY LINE OF CORYDON STREET 60.00 FEET WIDE AND THE NORTHEASTERLY RIGHT OF WAY LINE OF CERAL STREET, 60.00 FEET WIDE AS SHOWN ON RECORD OF SURVEY IN BOOK 19, PAGE 25, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

THENCE ALONG SAID RIGHT OF WAY LINE OF CORYDON STREET NORTH 36 DEGREES 35 MINUTES EAST 1110.00 FEET TO THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY LINE OF CORYDON STREET NORTH 36 DEGREES 35 MINUTES EAST 395.91 FEET TO THE INTERSECTION OF THE NORTHWESTERLY RIGHT OF WAY LINE OF CORYDON STREET AND THE WESTERLY RIGHT OF WAY LINE OF MISSION TRAIL, 60.00 FEET WIDE AS SHOWN BY RECORDED OF SURVEY IN BOOK 19, PAGE 25, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

THENCE ALONG SAID RIGHT OF WAY LINE OF MISSION TRAIL NORTH 02 DEGREES 27 MINUTES WEST 200.00 FEET; THENCE SOUTH 87 DEGREES 33 MINUTES WEST 802.72 FEET; THENCE SOUTH 11 DEGREES 03 MINUTES 36 SECONDS WEST 50.08 FEET TO A POINT ON A LINE PASSING THROUGH THE TRUE POINT OF BEGINNING HAVING A BEARING OF NORTH 53 DEGREES 25 MINUTES WEST; THENCE ALONG SAID LINE SOUTH 53 DEGREES 25 MINUTES EAST 727.65 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION DESCRIBED IN FINAL ORDER RECORDED SEPTEMBER 4, 2007 AS INSTRUMENT NO. 07-0562726. SAID LAND IS ALSO KNOWN AS PARCEL 4 AS SHOWN BY MAP ON FILE IN BOOK 73, PAGE 44 OF RECORDS OF SURVEY, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL B:

THAT PORTION OF LOTS 1 AND 4-A AS SHOWN ON AMENDED MAP OF A PORTION OF SEDCO TRACT NO. 28, N THE CITY OF LAKE ELSINORE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 19 PAGE(S) 37 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, TOGETHER WITH THAT PORTION OF THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY RIGHT OF WAY PER DEED RECORDED APRIL 8, 1921 IN BOOK 543 PAGE 259 OF DEEDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE NORTHWESTERLY RIGHT OF WAY LINE OF CORYDON STREET 60.00 FEET WIDE AND THE WESTERLY RIGHT OF WAY LINE OF MISSION TRAIL 60.00 FEET WIDE AS SHOWN ON RECORD OF

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SURVEY IN BOOK 19, PAGE 25, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; THENCE ALONG SAID WESTERLY RIGHT OF WAY LINE OF MISSION TRAIL NORTH 02 DEGREES 27 MINUTES WEST 200.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID RIGHT OF WAY LINE NORTH 02 DEGREES 27 MINUTES WEST 410.00 FEET; THENCE SOUTH 87 DEGREES 23 MINUTES WEST 704.21 FEET; THENCE SOUTH 11 DEGREES 03 MINUTES 36 SECONDS WEST 421.67 FEET TO A POINT ON A LINE PASSING THROUGH THE TRUE POINT OF BEGINNING HAVING A BEARING OF NORTH 87 DEGREES 33 MINUTES EAST; THENCE ALONG SAID LINE NORTH 87 DEGREES 33 MINUTES EAST 802.72 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION DESCRIBED IN FINAL ORDER RECORDED SEPTEMBER 4, 2007 AS INSTRUMENT NO. 07-0562726. SAID LAND IS ALSO KNOWN AS PARCEL 5 AS SHOWN BY MAP ON FILE IN BOOK 73, PAGE 44 OF RECORDS OF SURVEY, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE CITY OF LAKE ELSINORE, A MUNICIPAL CORPORATION BY GRANT DEED RECORDED JUNE 20, 2012 AS INSTRUMENT NO. NO. 2012-0284733 OF OFFICIAL RECORDS.

For conveyancing purposes only: APN : 370-050-026-3 (Affects : Parcel A) and APN : 370-050-030-6 (Affects : Parcel B)

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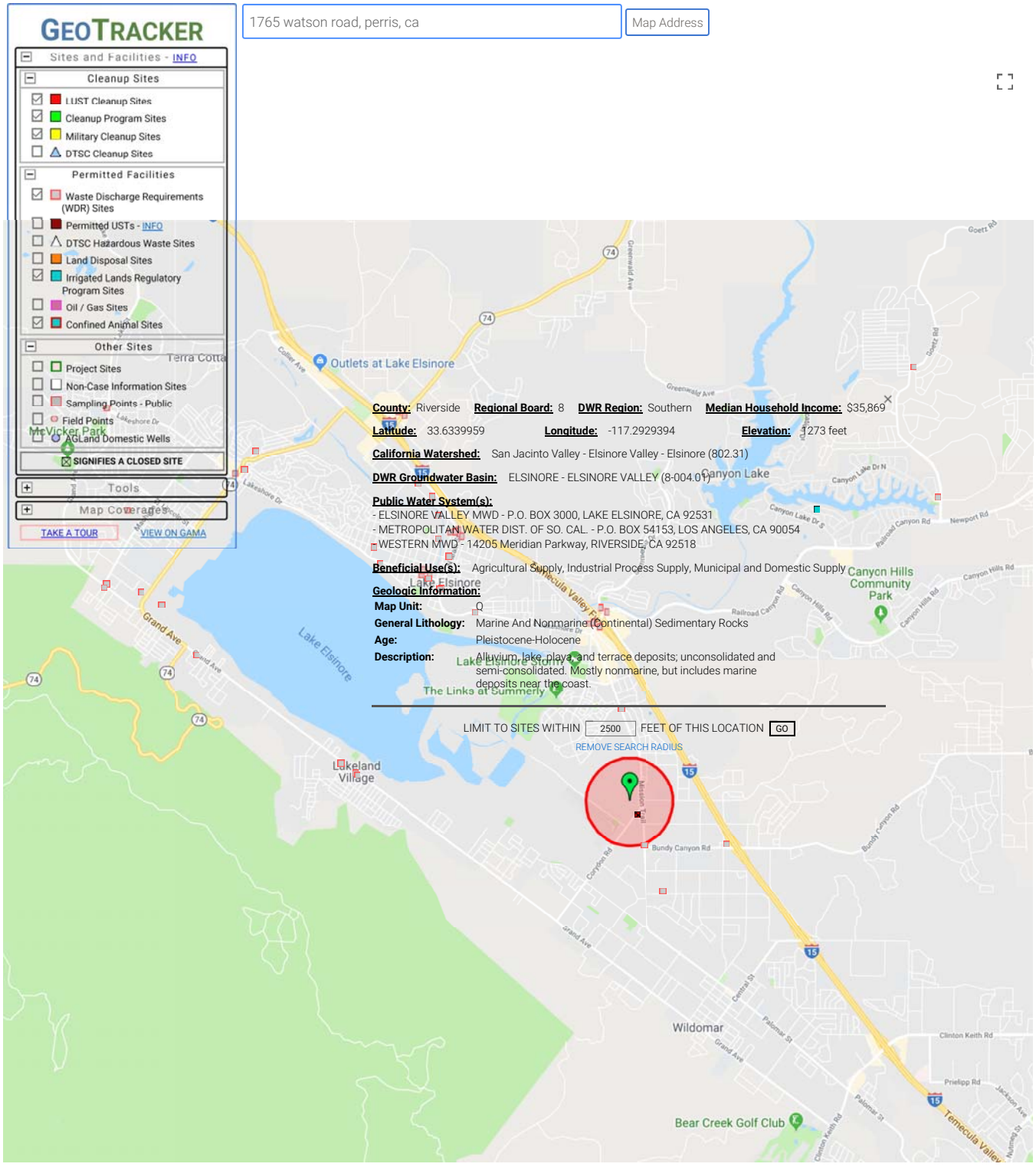

SITES FOUND IN SEARCH RADIUS

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER

CASE SUMMARY

REPORT DATE
11/26/1991

HAZARDOUS MATERIAL INCIDENT REPORT FILED WITH OES?

I. REPORTED BY -

UNKNOWN

CREATED BY

UNKNOWN

III. SITE LOCATION

FACILITY NAME
Elsinore Valley Municipal Water District

FACILITY ID

FACILITY ADDRESS
33751 MISSION TRAIL
WILDOMAR, CA 92595
RIVERSIDE COUNTY

ORIENTATION OF SITE TO STREET

CROSS STREET
WAITE ST.

V. SUBSTANCES RELEASED / CONTAMINANT(S) OF CONCERN

DIESEL

VI. DISCOVERY/ABATEMENT

DATE DISCHARGE BEGAN

DATE DISCOVERED	HOW DISCOVERED	DESCRIPTION
11/11/1991	Tank Closure	

DATE STOPPED	STOP METHOD	DESCRIPTION
10/28/1991	Close and Remove Tank	

VII. SOURCE/CAUSE

SOURCE OF DISCHARGE
Other

CAUSE OF DISCHARGE
Unknown

DISCHARGE DESCRIPTION

VIII. CASE TYPE

CASE TYPE
Soil

IX. REMEDIAL ACTION

NO REMEDIAL ACTIONS ENTERED

X. GENERAL COMMENTS

XI. CERTIFICATION

I HEREBY CERTIFY THAT THE INFORMATION REPORTED HEREIN IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

XII. REGULATORY USE ONLY

LOCAL AGENCY CASE NUMBER	REGIONAL BOARD CASE NUMBER
911100	083302003T

LOCAL AGENCY

CONTACT NAME	INITIALS	ORGANIZATION_NAME	EMAIL ADDRESS
Riverside County LOP	RIV	RIVERSIDE COUNTY LOP	

ADDRESS	CONTACT DESCRIPTION
3880 LEMON ST SUITE 200 RIVERSIDE, CA 92501	Riverside County Closed & Transferred Sites assigned to this "general contact"

PHONE TYPE	PHONE NUMBER	EXTENSION
PHONE	(951)-955-8980	

REGIONAL BOARD

CONTACT NAME	INITIALS	ORGANIZATION_NAME	EMAIL ADDRESS
CARL BERNHARDT	CAB	SANTA ANA RWQCB (REGION 8)	carl.bernhardt@waterboards.ca.gov

ADDRESS	CONTACT DESCRIPTION
3737 MAIN STREET, SUITE 500 RIVERSIDE, CA 925013339	

PHONE TYPE	PHONE NUMBER	EXTENSION
MAIN PHONE	(951)-782-4495	
Main Fax	(951)-781-6288	

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ELSINORE VALLEY MUNICIPAL WATER DISTRICT (T0606500259) - (MAP)

SIGN UP FOR EMAIL ALERTS

33751 MISSION TRAIL
WILDOMAR, CA 92595
RIVERSIDE COUNTY
LUST CLEANUP SITE (INFO)
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
RIVERSIDE COUNTY LOP *(LEAD) - CASE #: 911100*
CASEWORKER: *Riverside County LOP*
SANTA ANA RWQCB (REGION 8) - *CASE #: 083302003T*
CASEWORKER: *CARL BERNHARDT*

Summary | Cleanup Action Report | Regulatory Activities | *Environmental Data (ESI)* | Site Maps / Documents | Community Involvement | *Related Cases*

Regulatory Profile

PRINTABLE CASE SUMMARY

CLEANUP STATUS - DEFINITIONS

COMPLETED - CASE CLOSED AS OF 11/9/1993 - CLEANUP STATUS HISTORY

POTENTIAL CONTAMINANTS OF CONCERN
DIESEL

POTENTIAL MEDIA OF CONCERN
SOIL

FILE LOCATION
LOCAL AGENCY WAREHOUSE

DESIGNATED GROUNDWATER BENEFICIAL USE(S) - DEFINITIONS
MUN, AGR, PROC

DWR GROUNDWATER SUB-BASIN NAME
Elsinore - Elsinore Valley (8-004.01)

CALWATER WATERSHED NAME
San Jacinto Valley - Elsinore Valley - Elsinore (802.31)

Post Closure Site Management Requirements

NOTIFY PRIOR TO CHANGE IN LAND USE

Site History

No site history available

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APPENDIX

E

ENVIRONMENTAL SITE ASSESSMENT
TRANSACTION SCREEN QUESTIONNAIRE

This document is an excerpt of Practice E1528-06: Standard Practice for Environmental Site Assessments: Transaction Screen Process, which is under the jurisdiction of ASTM Committee E50 on Environmental Assessment as is the direct responsibility of Subcommittee E50.02 on Commercial Real Estate Transactions. This questionnaire represents only Sections 5 and 6 of Practice E 1528-06 and should not be construed as being the complete standard. It is necessary to refer to the full standard prior to using this questionnaire. COPYRIGHT@ 2006 ASTM INTERNATIONAL, West Conshohocken, PA. Prior edition copyrighted 2000. Stock # ADJE152806. For the complete standard, or to order additional copies of this questionnaire, contact ASTM Customer service at (610) 832-9585.

5. Introduction to Transaction Screen Questionnaire

5.1 *Process*--The *transaction screen process* consists of asking questions contained within the *transaction screen questionnaire* of *owners* and *occupants* of the *property*, observing site conditions at the property with direction provided by the *transaction screen questionnaire*, and, to the extent *reasonably ascertainable*, conducting limited research regarding certain government records and certain standard historical sources. The questions asked of *owners* are the same questions as those asked of *occupants*.

5.2 *Guide*--The *transaction screen questionnaire* is followed by a guide designed to assist the person completing the *transaction screen questionnaire*. The guide to the *transaction screen questionnaire* is set out in Sections 7-10 of this practice. The guide is divided into three sections: Guide for Owner/Occupant Inquiry, Guide to Site Visit, and Guide to Government Records/Historical Sources Inquiry.

5.2.1 To assist the *user*, its employee or agent, or the preparer in preparing a report, the guide repeats each of the questions set out in the *transaction screen questionnaire* in both the guide for *owner/occupant* inquiry and the guide to *site visit*. The questions regarding government records/historical sources inquiry are also repeated in the guide to that section.

5.2.2 The guide also describes the procedures to be followed to determine if reliance upon the information in a prior *transaction screen* is appropriate under this practice.

5.2.3 A *user*, his employee or agent, or *preparer* conducting the *transaction screen process* should not use the *transaction screen questionnaire* without reference to or without familiarity with the guide based on prior use of the guide.

5.3 The *user* may either conduct the *transaction screen process*, or delegate it to an employee or agent or may contract with a third party to prepare the questionnaire on behalf of the *user*. No matter who prepares the questionnaire, the *user* remains responsible for the decision to conduct limited environmental *due diligence* and the impact of that decision on risk management.

5.4 The *preparer* conducting the *transaction screen* process should use good faith efforts in determining answers to the questions set forth in the *transaction screen questionnaire*. The *user* should take time and care to check whatever records are in the *user's* possession and forward relevant information or specialized knowledge to the *preparer*.

5.5 *Knowledge*--All answers should be given to the best of the *owner's* or *occupant's* knowledge. The most knowledgeable person available should be chosen to answer the questions.

5.5.1 While the person conducting the *transaction screen* has an obligation to ask the questions in the *transaction screen questionnaire*, others may have no obligation to answer them.

5.5.2 The *transaction screen questionnaire* and the *transaction screen guide* sometimes include the phrase "to the best of your knowledge." This phrase does not impose a constructive knowledge standard. It is intended as an assurance to the person being questioned that he or she is not obligated to search out information he or she does not currently have in order to answer the particular question.

5.6 *Conclusions Regarding Afirmative* or *Unknown Answers*-Once a *transaction screen questionnaire* has been completed, it shall be presented to the user. Subject to 5.6 through 5.7, an affirmative, unknown, or no response is presumed to be a *potential environmental concern*. If any of the questions set forth in the *transaction screen questionnaire* are answered in the affirmative, the *preparer* must document the reason for the affirmative answer. If any of the questions are not answered or the answer is unknown, the *user* should document such nonresponse or answer of unknown and evaluate it in light of the other information obtained in the *transaction screen process*, including, in particular, the site visit and the government recordslhistorical sources inquiry. If the *user* decides no further inquiry is warranted after receiving no response, an answer of unknown, or an affirmative answer, the *user* must document the reasons for any such conclusion.

5.6.1 Upon obtaining an affirmative answer, an answer of unknown or no response, the *user* should first refer to the guide. The guide may provide sufficient explanation to allow a *user* to conclude that no further inquiry is appropriate with respect to the particular question.

5.6.2 If the guide to a particular question does not, in itself, permit a user to conclude that no further inquiry is appropriate, then the user should consider other information obtained from the *transaction screen process* relating to this question. For example, while on the site performing a *site visit*, a person may find a storage tank on the *property* and therefore answer Question 10 of the *transaction screen questionnaire* in the affirmative. However, during or subsequent to the *owner/occupant* inquiry, the *owner* may establish that substances now or historically contained in the tank (for example, water) are not likely to cause contamination.

5.6.3 If either the guide to the question or other information obtained during the *transaction screen process* does not permit a *user* to conclude no further inquiry is appropriate with respect to such question, then the user must determine, in the exercise of the *user's* reasonable business judgment, based upon the totality of unresolved affirmative answers or answers of unknown received during the *transaction screen process*, whether further inquiry may be limited to those specific issues identified as of concern.

5.7 *Presumption*--A presumption exists that further inquiry is necessary if an affirmative answer is given to a question or because the answer was unknown or no response was given. In rebutting this presumption, the *user* should evaluate information obtained from each component of the *transaction screen* process and consider whether sufficient information has been obtained to conclude that no further inquiry is necessary. The *user* must determine, in the exercise of the *user's* reasonable business judgment, the scope of such further inquiry.

5.8 *Further Inquiry*--Upon completing the *transaction screen questionnaire*, if the *user* concludes that further inquiry or action is needed (for example, consult with an environmental consultant, contractor, governmental authority, or perform additional governmental and/or historical records review), the *user* should proceed with such inquiry. (Note that if the *user* determines to proceed with a Phase I Environment Site Assessment, the *user* may apply the current Practice E 1527 or alternatively the provisions of EPA's regulation "Standards and Practices for All Appropriate Inquiries," 40 C.F.R. Part 312.)

5.9 *Signature*--The user and the *preparer* of the *transaction screen questionnaire* must complete and sign the questionnaire as provided at the end of the questionnaire.

6. Transaction Screen Questionnaire

6.1 *Persons to Be Questioned*-The following questions should be asked of *(1)* the current owner of the *property*, *(2)* any major occupant of the *property* or, if the property does not have any *major occupants*, at least 10 % of the occupants of the *property*, and *(3)* in addition to the current owner and the occupants identified in *(2)*, any *occupant* likely to be using, treating, generating, storing, or disposing of *hazardous substances* or *petroleum products* on or from the *property*. A major occupant is any *occupant* using at least 40 % of the leasable area of the *property* or any anchor tenant when the *property* is a shopping center. In a multifamily *property* containing both residential and commercial uses, the *preparer* does not need to ask questions of the residential *occupants*. The *preparer* should ask each person to answer all questions to the best of the respondent's *actual knowledge* and in good faith. When completing the *site visit* column, the *preparer* should be sure to observe the *property* and any buildings and other structures on the *property*. The guide to this *transaction screen questionnaire* (see Sections 7-10) provides further details on the appropriate use of this questionnaire. (See Note 2.)
NOTE 2-Unk = "unknown" or "no response."

Description of Site Address:

370-050-026 Lake Eslinore, Ca

Question	Owner	Occupants (if applicable)	Observed During Site Visit	If yes, provide description
1a. Is the property used for an industrial use?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
1b. Is any adjoining property used for an industrial use?	Yes ● No ○ Unk ○	Yes ○ No ○ Unk ○	Yes ● No ○	Aerofoam Industries Light Manufacturing Industry
2a. Did you observe evidence or do you have any prior knowledge that the property has been used for an industrial use in the past?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
2b. Did you observe evidence or do you have any prior knowledge that any adjoining property has been used for an industrial use in the past?	Yes ● No ○ Unk ○	Yes ○ No ○ Unk ○	Yes ● No ○	
3a. Is the property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
3b. Is any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
4a. Did you observe evidence or do you have any prior knowledge that the property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
4b. Did you observe evidence or do you have any prior knowledge that any adjoining property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
5a. Are there currently any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
5b. Did you observe evidence or do you have any prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
6a. Are there currently any industrial drums (typically 55 gal (208 L)) or sacks of chemicals located on the property or at the facility?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
6b. Did you observe evidence or do you have any prior knowledge that there have been previously any industrial drums (typically 55 gal (208 L)) or sacks of chemicals located on the property or at the facility?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
7a. Did you observe evidence or do you have any prior knowledge that fill dirt has been brought onto the property that originated from a contaminated site?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	

' Unk = "unknown" or "no response"

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Question	Owner	Occupants (if applicable)	Observed During Site Visit	If yes, provide description
7b. Did you observe evidence or do you have any prior knowledge that fill dirt has been brought onto the property that is of an unknown origin?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
8a. Are there currently any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
8b. Did you observe evidence or do you have any prior knowledge that there have been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
9a. Is there currently any stained soil on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
9b. Did you observe evidence or do you have any prior knowledge that there has been previously, any stained soil on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
10a. Are there currently any registered or unregistered storage tanks (above or underground) located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
10b. Did you observe evidence or do you have any prior knowledge that there have been previously, any registered or unregistered storage tanks (above or underground) located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
11a. Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
11b. Did you observe evidence or do you have any prior knowledge that there have been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
12a. Is there currently evidence of leaks, spills or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
12b. Did you observe evidence or do you have any prior knowledge that there have been previously any leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring drains, walls, ceilings or exposed grounds on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
13a. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
13b. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environment health agency?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
14. Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		
15a. Has the owner or occupant of the property been informed of the past existence of hazardous substances or petroleum products with respect to the property or any facility located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		
15b. Has the owner or occupant of the property been informed of the current existence of hazardous substances or petroleum products with respect to the property or any facility located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		
15c. Has the owner or occupant of the property been informed of the past existence of environmental violations with respect to the property or any facility located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		
15d. Has the owner or occupant of the property been informed of the current existence of environmental violations with respect to the property or any facility located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		

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Question	Owner	Occupants (if applicable)	Observed During Site Visit	If yes, provide description
16. Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		
17. Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		
18a. Does the property discharge waste-water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a storm water system?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
18b. Does the property discharge waste water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a sanitary sewer system?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
19. Did you observe evidence or do you have any prior knowledge that any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried and/or burned on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ●	

Government Records/Historical Sources Inquiry

(See guide, Section 10)

21. Do any of the following federal, state, or tribal government record systems list the property or any property within the search distance noted below (where available):	Approximate Minimum Search Distance, miles (kilometres)		
Federal NPL site	1.0	Yes ○	No ●
Federal Delisted NPL site	0.5	Yes ○	No ●
Federal CERCLIS	0.5	Yes ○	No ●
Federal CERCLIS NFRAP site	0.5	Yes ○	No ●
Federal RCRA CORRACTS facilities	1.0	Yes ○	No ●
Federal RCRA non-CORRACTS TSD	0.5	Yes ○	No ●
Federal RCRA generators	property and adjoining properties	Yes ○	No ●
Federal institutional control/engineering control registries	property only		
Federal ERNS	property only	Yes ○	No ●

State and tribal lists of hazardous waste sites identified for investigation or remediation:

State-and tribal-equivalent NPL	1.0	Yes ○	No ●
State-and tribal-equivalent	0.5	Yes ○	No ●
State-and tribal-landfill andlor solid waste disposal site lists	0.5	Yes ○	No ●
State-and tribal-leaking storage tank lists	0.5	Yes ●	No ○
State and tribal registered storage tank lists	property and adjoiningproperties	Yes ○	No ●
State and tribal institutional controllengineering control registries	property only	Yes ○	No ●
State and tribal voluntary cleanup sites	0.5	Yes ○	No ●
State and tribal Brownfield sites	0.5	Yes ○	No ●

22. Based upon a review of fire insurance maps (10.2.3) or local street directories (10.2.3), all as specified in the guide, are any buildings or other improvements on the property or on an adjoiningproperty identified as having been used for an industrial use or uses likely to lead to contamination of the property? Yes ○ No ● Unavailable ○

Result CLEAR

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The Owner questionnaire answers were provided was completed by:

Name: Brandon Humann
Title: Developer
Firm: Core States Group
Address: 4240 Eat Jurupa Street Suite 402
Ontario, Ca
Phone Number:
Date: 9/23/2019
Role (s) at the site:
Number of years at the site:
Relationship to use (e.g. principal, employee, agent, consultant):

The Occupant questionnaire answers were provided by:

Name:
Title:
Firm:
Address:
Phone Number:
Date:
Role (s) at the site:
Number of years at the site:
Realationship to use (e.g. principal, employee, agent, consultant):

The Site Visit questionnaire was completed by:

Name: Tim Doyle
Title: Geologist
Firm: ESGS
Address: 42184 Remington Avenue
Temecula, Ca
Phone Number: 951-461-4058
Date: 9/23/2019
Role (s) at the site: Assessor
Number of years at the site:
Realationship to use (e.g. principal, employee, agent, consultant):

It is the user's responsibility to draw conclusions regarding afirmative or unknown answers.

The Government Records and Historical Sources Inquiry questionnaire was completed by:

Name: Tim Doyle
Title: Geologist
Firm: ESGS
Address: 42184 Remington Avenue
Temecula, Ca
Phone Number: 951-461-4058
Date: 9/23/2019
Role (s) at the site: Assessor
Number of years at the site:
Relationship to use (e.g. principal, employee, agent, consultant):

User's relationship to the site (for example, owner, prospective purchaser, lender, etc.)

If the preparer (s) is different from the user, complete the following:

Name of User:
User's Address:
User's Phone Number:

Copies of the completed questionnaires have been filed at:

Copies of the completed questionnaires have been mailed or delivered to:

Preparer represents that to the best of the preparer's knowledge the above statements and facts are true and correct and to the best of the preparer's actual knowledge no material facts have been suppressed or misstated.

Signature: Tim Doyle
Date: 9/23/2019
Signature:
Date:
Signature:
Date:

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West Conshohocken, PA 19428-2959

ENVIRONMENTAL SITE ASSESSMENT
TRANSACTION SCREEN QUESTIONNAIRE

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5.1 *Process*--The *transaction screen process* consists of asking questions contained within the *transaction screen questionnaire* of *owners* and *occupants* of the *property*, observing site conditions at the property with direction provided by the *transaction screen questionnaire*, and, to the extent *reasonably ascertainable*, conducting limited research regarding certain government records and certain standard historical sources. The questions asked of *owners* are the same questions as those asked of *occupants*.

5.2 *Guide*--The *transaction screen questionnaire* is followed by a guide designed to assist the person completing the *transaction screen questionnaire*. The guide to the *transaction screen questionnaire* is set out in Sections 7-10 of this practice. The guide is divided into three sections: Guide for Owner/Occupant Inquiry, Guide to Site Visit, and Guide to Government Records/Historical Sources Inquiry.

5.2.1 To assist the *user*, its employee or agent, or the preparer in preparing a report, the guide repeats each of the questions set out in the *transaction screen questionnaire* in both the guide for *owner/occupant* inquiry and the guide to *site visit*. The questions regarding government records/historical sources inquiry are also repeated in the guide to that section.

5.2.2 The guide also describes the procedures to be followed to determine if reliance upon the information in a prior *transaction screen* is appropriate under this practice.

5.2.3 A *user*, his employee or agent, or *preparer* conducting the *transaction screen process* should not use the *transaction screen questionnaire* without reference to or without familiarity with the guide based on prior use of the guide.

5.3 The *user* may either conduct the *transaction screen process*, or delegate it to an employee or agent or may contract with a third party to prepare the questionnaire on behalf of the *user*. No matter who prepares the questionnaire, the *user* remains responsible for the decision to conduct limited environmental *due diligence* and the impact of that decision on risk management.

5.4 The *preparer* conducting the *transaction screen* process should use good faith efforts in determining answers to the questions set forth in the *transaction screen questionnaire*. The *user* should take time and care to check whatever records are in the *user's* possession and forward relevant information or specialized knowledge to the *preparer*.

5.5 *Knowledge*--All answers should be given to the best of the *owner's* or *occupant's* knowledge. The most knowledgeable person available should be chosen to answer the questions.

5.5.1 While the person conducting the *transaction screen* has an obligation to ask the questions in the *transaction screen questionnaire*, others may have no obligation to answer them.

5.5.2 The *transaction screen questionnaire* and the *transaction screen guide* sometimes include the phrase "to the best of your knowledge." This phrase does not impose a constructive knowledge standard. It is intended as an assurance to the person being questioned that he or she is not obligated to search out information he or she does not currently have in order to answer the particular question.

5.6 *Conclusions Regarding Afirmative* or *Unknown Answers*-Once a *transaction screen questionnaire* has been completed, it shall be presented to the user. Subject to 5.6 through 5.7, an affirmative, unknown, or no response is presumed to be a *potential environmental concern*. If any of the questions set forth in the *transaction screen questionnaire* are answered in the affirmative, the *preparer* must document the reason for the affirmative answer. If any of the questions are not answered or the answer is unknown, the *user* should document such nonresponse or answer of unknown and evaluate it in light of the other information obtained in the *transaction screen process*, including, in particular, the site visit and the government recordslhistorical sources inquiry. If the *user* decides no further inquiry is warranted after receiving no response, an answer of unknown, or an affirmative answer, the *user* must document the reasons for any such conclusion.

5.6.1 Upon obtaining an affirmative answer, an answer of unknown or no response, the *user* should first refer to the guide. The guide may provide sufficient explanation to allow a *user* to conclude that no further inquiry is appropriate with respect to the particular question.

5.6.2 If the guide to a particular question does not, in itself, permit a user to conclude that no further inquiry is appropriate, then the user should consider other information obtained from the *transaction screen process* relating to this question. For example, while on the site performing a *site visit*, a person may find a storage tank on the *property* and therefore answer Question 10 of the *transaction screen questionnaire* in the affirmative. However, during or subsequent to the *owner/occupant* inquiry, the *owner* may establish that substances now or historically contained in the tank (for example, water) are not likely to cause contamination.

5.6.3 If either the guide to the question or other information obtained during the *transaction screen process* does not permit a *user* to conclude no further inquiry is appropriate with respect to such question, then the user must determine, in the exercise of the *user's* reasonable business judgment, based upon the totality of unresolved affirmative answers or answers of unknown received during the *transaction screen process*, whether further inquiry may be limited to those specific issues identified as of concern.

5.7 *Presumption*--A presumption exists that further inquiry is necessary if an affirmative answer is given to a question or because the answer was unknown or no response was given. In rebutting this presumption, the *user* should evaluate information obtained from each component of the *transaction screen* process and consider whether sufficient information has been obtained to conclude that no further inquiry is necessary. The *user* must determine, in the exercise of the *user's* reasonable business judgment, the scope of such further inquiry.

5.8 *Further Inquiry*--Upon completing the *transaction screen questionnaire*, if the *user* concludes that further inquiry or action is needed (for example, consult with an environmental consultant, contractor, governmental authority, or perform additional governmental and/or historical records review), the *user* should proceed with such inquiry. (Note that if the *user* determines to proceed with a Phase I Environment Site Assessment, the *user* may apply the current Practice E 1527 or alternatively the provisions of EPA's regulation "Standards and Practices for All Appropriate Inquiries," 40 C.F.R. Part 312.)

5.9 *Signature*--The user and the *preparer* of the *transaction screen questionnaire* must complete and sign the questionnaire as provided at the end of the questionnaire.

6. Transaction Screen Questionnaire

6.1 *Persons to Be Questioned*-The following questions should be asked of *(1)* the current owner of the *property*, *(2)* any major occupant of the *property* or, if the property does not have any *major occupants*, at least 10 % of the occupants of the *property*, and *(3)* in addition to the current owner and the occupants identified in *(2)*, any *occupant* likely to be using, treating, generating, storing, or disposing of *hazardous substances* or *petroleum products* on or from the *property*. A major occupant is any *occupant* using at least 40 % of the leasable area of the *property* or any anchor tenant when the *property* is a shopping center. In a multifamily *property* containing both residential and commercial uses, the *preparer* does not need to ask questions of the residential *occupants*. The *preparer* should ask each person to answer all questions to the best of the respondent's *actual knowledge* and in good faith. When completing the *site visit* column, the *preparer* should be sure to observe the *property* and any buildings and other structures on the *property*. The guide to this *transaction screen questionnaire* (see Sections 7-10) provides further details on the appropriate use of this questionnaire. (See Note 2.)
NOTE 2-Unk = "unknown" or "no response."

Description of Site Address:

_____

_____

_____

Question	Owner	Occupants (if applicable)	Observed During Site Visit	If yes, provide description
1a. Is the property used for an industrial use?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
1b. Is any adjoining property used for an industrial use?	Yes ● No ○ Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
2a. Did you observe evidence or do you have any prior knowledge that the property has been used for an industrial use in the past?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
2b. Did you observe evidence or do you have any prior knowledge that any adjoining property has been used for an industrial use in the past?	Yes ● No ○ Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
3a. Is the property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
3b. Is any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
4a. Did you observe evidence or do you have any prior knowledge that the property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
4b. Did you observe evidence or do you have any prior knowledge that any adjoining property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
5a. Are there currently any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?	Yes ○ No ○ Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
5b. Did you observe evidence or do you have any prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
6a. Are there currently any industrial drums (typically 55 gal (208 L)) or sacks of chemicals located on the property or at the facility?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
6b. Did you observe evidence or do you have any prior knowledge that there have been previously any industrial drums (typically 55 gal (208 L)) or sacks of chemicals located on the property or at the facility?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
7a. Did you observe evidence or do you have any prior knowledge that fill dirt has been brought onto the property that originated from a contaminated site?	Yes ○ No ○ Unk ●	Yes ○ No ○ Unk ○	Yes ○ No ○	

' Unk = "unknown" or "no response"

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Question	Owner	Occupants (if applicable)	Observed During Site Visit	If yes, provide description
7b. Did you observe evidence or do you have any prior knowledge that fill dirt has been brought onto the property that is of an unknown origin?	Yes ○ No ○ Unk ●	Yes ○ No ○ Unk ○	Yes ○ No ○	
8a. Are there currently any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
8b. Did you observe evidence or do you have any prior knowledge that there have been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
9a. Is there currently any stained soil on the property?	Yes ○ No ○ Unk ●	Yes ○ No ○ Unk ○	Yes ○ No ○	
9b. Did you observe evidence or do you have any prior knowledge that there has been previously, any stained soil on the property?	Yes ○ No ○ Unk ●	Yes ○ No ○ Unk ○	Yes ○ No ○	
10a. Are there currently any registered or unregistered storage tanks (above or underground) located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
10b. Did you observe evidence or do you have any prior knowledge that there have been previously, any registered or unregistered storage tanks (above or underground) located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
11a. Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
11b. Did you observe evidence or do you have any prior knowledge that there have been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
12a. Is there currently evidence of leaks, spills or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
12b. Did you observe evidence or do you have any prior knowledge that there have been previously any leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring drains, walls, ceilings or exposed grounds on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
13a. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
13b. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environment health agency?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
14. Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?	Yes ○ No ○ Unk ●	Yes ○ No ○ Unk ○		
15a. Has the owner or occupant of the property been informed of the past existence of hazardous substances or petroleum products with respect to the property or any facility located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		
15b. Has the owner or occupant of the property been informed of the current existence of hazardous substances or petroleum products with respect to the property or any facility located on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		
15c. Has the owner or occupant of the property been informed of the past existence of environmental violations with respect to the property or any facility located on the property?	Yes ○ No ○ Unk ●	Yes ○ No ○ Unk ○		
15d. Has the owner or occupant of the property been informed of the current existence of environmental violations with respect to the property or any facility located on the property?	Yes ○ No ○ Unk ●	Yes ○ No ○ Unk ○		

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Question	Owner	Occupants (if applicable)	Observed During Site Visit	If yes, provide description
16. Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		
17. Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○		
18a. Does the property discharge waste-water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a storm water system?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
18b. Does the property discharge waste water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a sanitary sewer system?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
19. Did you observe evidence or do you have any prior knowledge that any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried and/or burned on the property?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	Yes ○ No ● Unk ○	Yes ○ No ○ Unk ○	Yes ○ No ○	

Government Records/Historical Sources Inquiry

(See guide, Section 10)

21. Do any of the following federal, state, or tribal government record systems list the property or any property within the search distance noted below (where available):	Approximate Minimum Search Distance, miles (kilometres)		
Federal NPL site	1.0	Yes ○	No ○
Federal Delisted NPL site	0.5	Yes ○	No ○
Federal CERCLIS	0.5	Yes ○	No ○
Federal CERCLIS NFRAP site	0.5	Yes ○	No ○
Federal RCRA CORRACTS facilities	1.0	Yes ○	No ○
Federal RCRA non-CORRACTS TSD	0.5	Yes ○	No ○
Federal RCRA generators	property and adjoining properties	Yes ○	No ○
Federal institutional control/engineering control registries	property only		
Federal ERNS	property only	Yes ○	No ○

State and tribal lists of hazardous waste sites identified for investigation or remediation:

State-and tribal-equivalent NPL	1.0	Yes ○	No ○
State-and tribal-equivalent	0.5	Yes ○	No ○
State-and tribal-landfill andlor solid waste disposal site lists	0.5	Yes ○	No ○
State-and tribal-leaking storage tank lists	0.5	Yes ○	No ○
State and tribal registered storage tank lists	property and adjoiningproperties	Yes ○	No ○
State and tribal institutional controllengineering control registries	property only	Yes ○	No ○
State and tribal voluntary cleanup sites	0.5	Yes ○	No ○
State and tribal Brownfield sites	0.5	Yes ○	No ○

22. Based upon a review of fire insurance maps (10.2.3) or local street directories (10.2.3), all as specified in the guide, are any buildings or other improvements on the property or on an adjoiningproperty identified as having been used for an industrial use or uses likely to lead to contamination of the property? Yes ○ No ○ Unavailable ○

Result _____

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The Owner questionnaire answers were provided was completed by:

Name: Brandon Humann

Title: Senior Project Manager

Firm: Core States Group

Address: 4240 E. Jurupa Street, Suite 402

Ontario, CA 91761

Phone Number: (909) 467-8919

Date: 9/23/19

Role (s) at the site: N/A

Number of years at the site: N/A

Relationship to use (e.g. principal, employee, agent, consultant): Consultant

The Occupant questionnaire answers were provided by:

Name

Title

Firm

Address

Phone Number

Date

Role (s) at the site

Number of years at the site

Realationship to use (e.g. principal, employee, agent, consultant)

The Site Visit questionnaire was completed by:

Name

Title

Firm

Address

Phone Number

Date

Role (s) at the site

Number of years at the site

Realationship to use (e.g. principal, employee, agent, consultant)

It is the user's responsibility to draw conclusions regarding afirmative or unknown answers.

The Government Records and Historical Sources Inquiry questionnaire was completed by:

Name

Title

Firm

Address

Phone Number

Date

Role (s) at the site

Number of years at the site

Relationship to use (e.g. principal, employee, agent, consultant)

User's relationship to the site (for example, owner, prospective purchaser, lender, etc.)

If the preparer (s) is different from the user, complete the following:

Name of User

User's Address

User's Phone Number

Copies of the completed questionnaires have been filed at:

Copies of the completed questionnaires have been mailed or delivered to:

Preparer represents that to the best of the preparer's knowledge the above statements and facts are true and correct and to the best of the preparer's actual knowledge no material facts have been suppressed or misstated.

Signature:

Date:

Signature:

Date:

Signature:

Date:

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To order additional copies of this questionaire,
contact ASTM International, Customer Service.
phone: (610) 832-9585
fax: (610) 9555
e-mail: service@astm.org



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PO Box C700
West Conshohocken, PA 19428-2959

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

Not Applicable

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: KWC Engineers — Date: 1/7/2020

Designed by: Calvin Sy — Case No:

Company Project Number/Name: 1990 Corydon Gateway

BMP Identification

BMP NAME / ID: DMA A

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.68 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
Roofs	*38165*	*Roofs*	*1*	*0.89*	*34043.2*			
Street	*171583*	*Concrete or Asphalt*	*1*	*0.89*	*153052*			
Landscpe	*54060*	*Ornamental Landscaping*	*0.1*	*0.11*	*5971.4*			

WQMP BMP SIZING -Bioretention Facility BASIN A
DATE OF LATEST REVISION: 03/30/2020

BASIN	BMP Design Volume Required Vbmp[1]	Basin Top Area	Basin Bottom Area	Basin Average Area	Basin Depth	Media Volume Provided	Basin Surface Ponding Volume Provided	Total Basin Volume Provided	Total Basin Volume Provided
	(cu-ft)	(s.f.)	(s.f.)	(s.f.)	(ft)	(cu.ft)	(cu.ft)	(cu.ft)	(ac-ft)
BASIN A3	10,940	7,154	6,463	6,809	0.5	8,227	3,404	11,631	0.27

Assume Media: 30" sand filter media (30% void spacing) over 12" of gravel (40% void spacing)

Note:

1) See BMP Design Volume Worksheet for Vbmp calculations.

Bioretention Facility Design: (4:1 Side Slope)

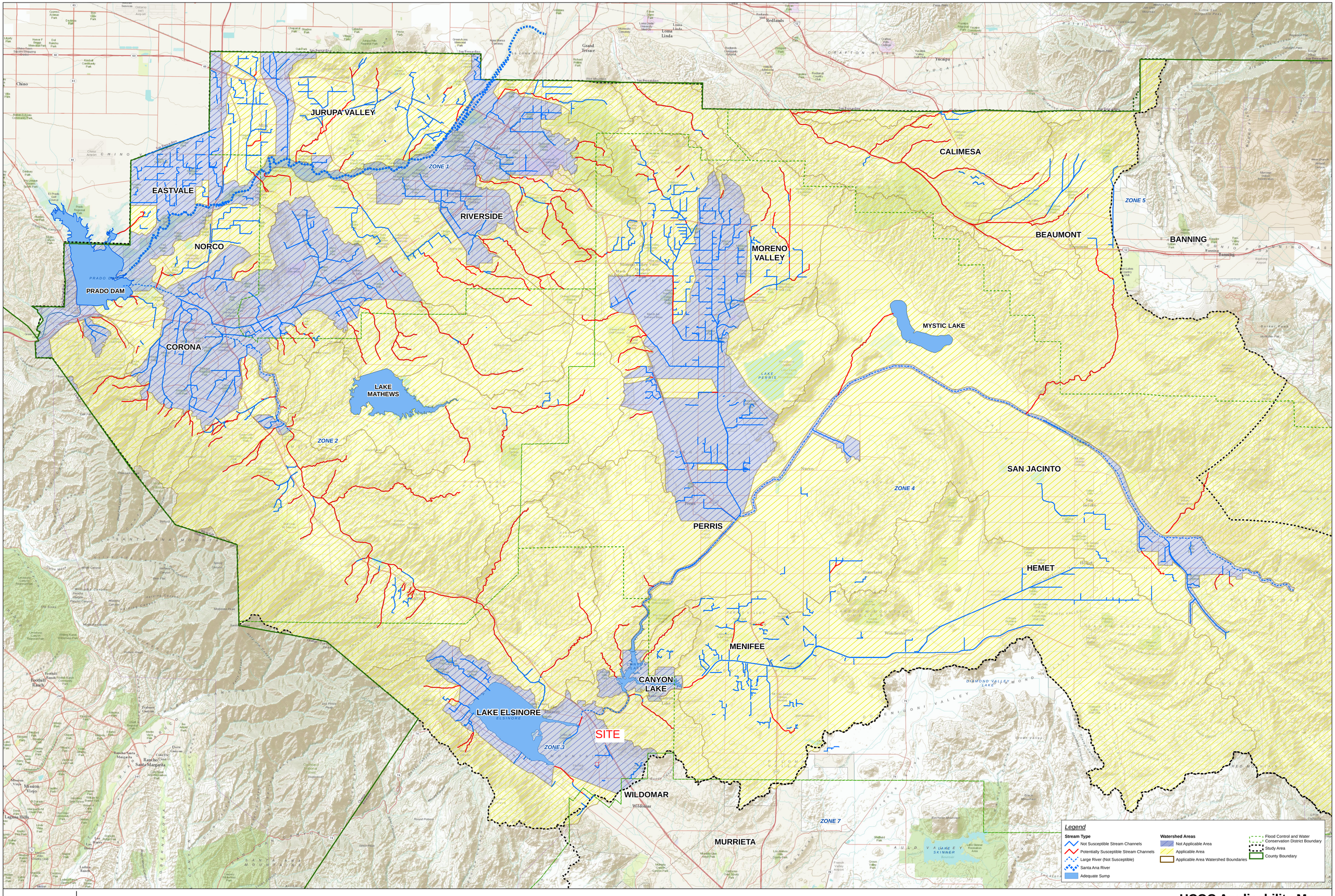
Tributary Area, A_T=	280,645	sf	
Design Volume, V_{BMP}=	10,940	cf	
Depth of Eng. Soil, d_S=	3	ft	
Depth of Ponding, d_P=	0.5	ft	
Top Width, W_T=	75	ft	
Total Effective Depth, d_E=	1.79	ft	(note: calculated using LID Bioretention Facility design equation)
Min. Surface Area Req'd, A_M=	6,109	sf	(note: calculated using LID Bioretention Facility design equation)
Min. Surface Area Provided=	7,154	sf	(greater than required, okay)

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

Not applicable due to Lake Elsinore Sump, downstream

(See attached map)



HCOC Applicability Map

Hydromodification Susceptibility Documentation Report and Mapping
Riverside County Flood Control and Water Conservation District

Map 2

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1on page 23 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
■ A. **On-site storm drain inlets**	☐ **Locations of inlets.**	■ **Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.**	■ **Maintain and periodically repaint or replace inlet markings.** ■ **Provide stormwater pollution prevention information to new site owners, lessees, or operators.** ■ **See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** ■ **Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."**
☐ B. **Interior floor drains and elevator shaft sump pumps**		☐ **State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**
☐ C. **Interior parking garages**		☐ **State that parking garage floor drains will be plumbed to the sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
■ D1. **Need for future indoor & structural pest control**		❑ **Note building design features that discourage entry of pests.**	■ **Provide Integrated Pest Management information to owners, lessees, and operators.**
■ D2. **Landscape/ Outdoor Pesticide Use**	❑ **Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.** ❑ **Show self-retaining landscape areas, if any.** ❑ **Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)**	**State that final landscape plans will accomplish all of the following.** ❑ **Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.** ■ **Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.** ■ **Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.** ■ **Consider using pest-resistant plants, especially adjacent to hardscape.** **To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.**	■ **Maintain landscaping using minimum or no pesticides.** ■ **See applicable operational BMPs in "What you should know for…..Landscape and Gardening"** at http://rcflood.org/stormwater/**Error! Hyperlink reference not valid.** ❑ **Provide IPM information to new owners, lessees and operators.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ E. **Pools, spas, ponds, decorative fountains, and other water features.**	☐ **Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet. (Exception: Public pools must be plumbed according to County Department of Environmental Health Guidelines.)**	**If the Co-Permittee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.**	☐ **See applicable operational BMPs in** "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at http://rcflood.org/stormwater/
☐ F. **Food service**	☐ **For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment.** ☐ **On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.**	☐ **Describe the location and features of the designated cleaning area.** ☐ **Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.**	☐ **See the brochure, "**The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http://rcflood.org/stormwater/ **Provide this brochure to new site owners, lessees, and operators.**
☐ G. **Refuse areas**	☐ **Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas.** ☐ **If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area.** ☐ **Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.**	☐ **State how site refuse will be handled and provide supporting detail to what is shown on plans.** ☐ **State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.**	☐ **State how the following will be implemented:** **Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ H. **Industrial processes.**	❑ **Show process area.**	❑ **If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."**	❑ **See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** See the brochure "Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities" at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ I. **Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)**	❑ **Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area.** ❑ **Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults.** ❑ **Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.**	**Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.** **Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for:** ▪ **Hazardous Waste Generation** ▪ **Hazardous Materials Release Response and Inventory** ▪ **California Accidental Release (CalARP)** ▪ **Aboveground Storage Tank** ▪ **Uniform Fire Code Article 80 Section 103(b) & (c) 1991** ▪ **Underground Storage Tank** **www.cchealth.org/groups/hazmat/**	❑ **See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
■ J. **Vehicle and Equipment Cleaning**	■ **Show on drawings as appropriate:** **(1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.** **(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).** **(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.** **(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.**	❑ **If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.**	**Describe operational measures to implement the following (if applicable):** ■ **Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system.** Refer to "Outdoor Cleaning Activities and Professional Mobile Service Providers" for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/ ❑ **Car dealerships and similar may rinse cars with water only.**

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❑ K. **Vehicle/Equipment Repair and Maintenance**	❑ **Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.** ❑ **Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.** ❑ **Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.**	❑ **State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.** ❑ **State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.** ❑ **State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.**	**In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:** ❑ **No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.** ❑ **No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.** ❑ **No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.** Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at http://rcflood.org/stormwater/ Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
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☐ L. **Fuel Dispensing Areas**	☐ **Fueling areas[6] shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable.** ☐ **Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area[1].] The canopy [or cover] shall not drain onto the fueling area.**	Fuel pump delivery systems to be outfitted with quick-shutoff nozzles and maintained by owner to prevent leakage.	☐ **The property owner shall dry sweep the fueling area routinely.** ☐ **See the Fact Sheet SD-30 , "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

[6] **The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ M. **Loading Docks**	❑ **Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.** ❑ **Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.** ❑ **Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.**		❑ **Move loaded and unloaded items indoors as soon as possible.** ❑ **See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
■ N. **Fire Sprinkler Test Water**		■ **Provide a means to drain fire sprinkler test water to the sanitary sewer.**	■ **See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**
O. **Miscellaneous Drain or Wash Water or Other Sources** ❑ **Boiler drain lines** ❑ **Condensate drain lines** ❑ **Rooftop equipment** ❑ **Drainage sumps** ❑ **Roofing, gutters, and trim.** ❑ **Other sources**		❑ **Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.** ❑ **Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system.** ❑ **Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment.** ❑ **Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.** ■ **Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.** **Include controls for other sources as specified by local reviewer.**	

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ P. **Plazas, sidewalks, and parking lots.**			☒ **Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.**

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Will be provided in Final WQMP Plan

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

Bioretention TC-32



Design Considerations

- Soil for Infiltration
- Tributary Area
- Slope
- Aesthetics
- Environmental Side-effects

Description

The bioretention best management practice (BMP) functions as a soil and plant-based filtration device that removes pollutants through a variety of physical, biological, and chemical treatment processes. These facilities normally consist of a grass buffer strip, sand bed, ponding area, organic layer or mulch layer, planting soil, and plants. The runoff's velocity is reduced by passing over or through buffer strip and subsequently distributed evenly along a ponding area. Exfiltration of the stored water in the bioretention area planting soil into the underlying soils occurs over a period of days.

Targeted Constituents

☑	Sediment	■
☑	Nutrients	▲
☑	Trash	■
☑	Metals	■
☑	Bacteria	■
☑	Oil and Grease	■
☑	Organics	■

Legend ***(Removal Effectiveness)***

- ● Low
- ▲ Medium
- ■ High

California Experience

None documented. Bioretention has been used as a stormwater BMP since 1992. In addition to Prince George's County, MD and Alexandria, VA, bioretention has been used successfully at urban and suburban areas in Montgomery County, MD; Baltimore County, MD; Chesterfield County, VA; Prince William County, VA; Smith Mountain Lake State Park, VA; and Cary, NC.

Advantages

- Bioretention provides stormwater treatment that enhances the quality of downstream water bodies by temporarily storing runoff in the BMP and releasing it over a period of four days to the receiving water (EPA, 1999).
- The vegetation provides shade and wind breaks, absorbs noise, and improves an area's landscape.

Limitations

- The bioretention BMP is not recommended for areas with slopes greater than 20% or where mature tree removal would

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be required since clogging may result, particularly if the BMP receives runoff with high sediment loads (EPA, 1999).

- Bioretention is not a suitable BMP at locations where the water table is within 6 feet of the ground surface and where the surrounding soil stratum is unstable.
- By design, bioretention BMPs have the potential to create very attractive habitats for mosquitoes and other vectors because of highly organic, often heavily vegetated areas mixed with shallow water.
- In cold climates the soil may freeze, preventing runoff from infiltrating into the planting soil.

Design and Sizing Guidelines

- The bioretention area should be sized to capture the design storm runoff.
- In areas where the native soil permeability is less than 0.5 in/hr an underdrain should be provided.
- Recommended minimum dimensions are 15 feet by 40 feet, although the preferred width is 25 feet. Excavated depth should be 4 feet.
- Area should drain completely within 72 hours.
- Approximately 1 tree or shrub per 50 ft^2 of bioretention area should be included.
- Cover area with about 3 inches of mulch.

Construction/Inspection Considerations

Bioretention area should not be established until contributing watershed is stabilized.

Performance

Bioretention removes stormwater pollutants through physical and biological processes, including adsorption, filtration, plant uptake, microbial activity, decomposition, sedimentation and volatilization (EPA, 1999). Adsorption is the process whereby particulate pollutants attach to soil (e.g., clay) or vegetation surfaces. Adequate contact time between the surface and pollutant must be provided for in the design of the system for this removal process to occur. Thus, the infiltration rate of the soils must not exceed those specified in the design criteria or pollutant removal may decrease. Pollutants removed by adsorption include metals, phosphorus, and hydrocarbons. Filtration occurs as runoff passes through the bioretention area media, such as the sand bed, ground cover, and planting soil.

Common particulates removed from stormwater include particulate organic matter, phosphorus, and suspended solids. Biological processes that occur in wetlands result in pollutant uptake by plants and microorganisms in the soil. Plant growth is sustained by the uptake of nutrients from the soils, with woody plants locking up these nutrients through the seasons. Microbial activity within the soil also contributes to the removal of nitrogen and organic matter. Nitrogen is removed by nitrifying and denitrifying bacteria, while aerobic bacteria are responsible for the decomposition of the organic matter. Microbial processes require oxygen and can result in depleted oxygen levels if the bioretention area is not adequately

aerated. Sedimentation occurs in the swale or ponding area as the velocity slows and solids fall out of suspension.

The removal effectiveness of bioretention has been studied during field and laboratory studies conducted by the University of Maryland (Davis et al, 1998). During these experiments, synthetic stormwater runoff was pumped through several laboratory and field bioretention areas to simulate typical storm events in Prince George's County, MD. Removal rates for heavy metals and nutrients are shown in Table 1.

Table 1 Laboratory and Estimated Bioretention Davis et al. (1998); PGDER (1993)

Pollutant	Removal Rate
Total Phosphorus	70-83%
Metals (Cu, Zn, Pb)	93-98%
TKN	68-80%
Total Suspended Solids	90%
Organics	90%
Bacteria	90%

Results for both the laboratory and field experiments were similar for each of the pollutants analyzed. Doubling or halving the influent pollutant levels had little effect on the effluent pollutants concentrations (Davis et al, 1998).

The microbial activity and plant uptake occurring in the bioretention area will likely result in higher removal rates than those determined for infiltration BMPs.

Siting Criteria

Bioretention BMPs are generally used to treat stormwater from impervious surfaces at commercial, residential, and industrial areas (EPA, 1999). Implementation of bioretention for stormwater management is ideal for median strips, parking lot islands, and swales. Moreover, the runoff in these areas can be designed to either divert directly into the bioretention area or convey into the bioretention area by a curb and gutter collection system.

The best location for bioretention areas is upland from inlets that receive sheet flow from graded areas and at areas that will be excavated (EPA, 1999). In order to maximize treatment effectiveness, the site must be graded in such a way that minimizes erosive conditions as sheet flow is conveyed to the treatment area. Locations where a bioretention area can be readily incorporated into the site plan without further environmental damage are preferred. Furthermore, to effectively minimize sediment loading in the treatment area, bioretention only should be used in stabilized drainage areas.

Additional Design Guidelines

The layout of the bioretention area is determined after site constraints such as location of utilities, underlying soils, existing vegetation, and drainage are considered (EPA, 1999). Sites with loamy sand soils are especially appropriate for bioretention because the excavated soil can be backfilled and used as the planting soil, thus eliminating the cost of importing planting soil.

The use of bioretention may not be feasible given an unstable surrounding soil stratum, soils with clay content greater than 25 percent, a site with slopes greater than 20 percent, and/or a site with mature trees that would be removed during construction of the BMP.

Bioretention can be designed to be off-line or on-line of the existing drainage system (EPA, 1999). The drainage area for a bioretention area should be between 0.1 and 0.4 hectares (0.25 and 1.0 acres). Larger drainage areas may require multiple bioretention areas. Furthermore, the maximum drainage area for a bioretention area is determined by the expected rainfall intensity and runoff rate. Stabilized areas may erode when velocities are greater than 5 feet per second (1.5 meter per second). The designer should determine the potential for erosive conditions at the site.

The size of the bioretention area, which is a function of the drainage area and the runoff generated from the area is sized to capture the water quality volume.

The recommended minimum dimensions of the bioretention area are 15 feet (4.6 meters) wide by 40 feet (12.2 meters) long, where the minimum width allows enough space for a dense, randomly-distributed area of trees and shrubs to become established. Thus replicating a natural forest and creating a microclimate, thereby enabling the bioretention area to tolerate the effects of heat stress, acid rain, runoff pollutants, and insect and disease infestations which landscaped areas in urban settings typically are unable to tolerate. The preferred width is 25 feet (7.6 meters), with a length of twice the width. Essentially, any facilities wider than 20 feet (6.1 meters) should be twice as long as they are wide, which promotes the distribution of flow and decreases the chances of concentrated flow.

In order to provide adequate storage and prevent water from standing for excessive periods of time the ponding depth of the bioretention area should not exceed 6 inches (15 centimeters). Water should not be left to stand for more than 72 hours. A restriction on the type of plants that can be used may be necessary due to some plants' water intolerance. Furthermore, if water is left standing for longer than 72 hours mosquitoes and other insects may start to breed.

The appropriate planting soil should be backfilled into the excavated bioretention area. Planting soils should be sandy loam, loamy sand, or loam texture with a clay content ranging from 10 to 25 percent.

Generally the soil should have infiltration rates greater than 0.5 inches (1.25 centimeters) per hour, which is typical of sandy loams, loamy sands, or loams. The pH of the soil should range between 5.5 and 6.5, where pollutants such as organic nitrogen and phosphorus can be adsorbed by the soil and microbial activity can flourish. Additional requirements for the planting soil include a 1.5 to 3 percent organic content and a maximum 500 ppm concentration of soluble salts.

Soil tests should be performed for every 500 cubic yards (382 cubic meters) of planting soil, with the exception of pH and organic content tests, which are required only once per bioretention area (EPA, 1999). Planting soil should be 4 inches (10.1 centimeters) deeper than the bottom of the largest root ball and 4 feet (1.2 meters) altogether. This depth will provide adequate soil for the plants' root systems to become established, prevent plant damage due to severe wind, and provide adequate moisture capacity. Most sites will require excavation in order to obtain the recommended depth.

Planting soil depths of greater than 4 feet (1.2 meters) may require additional construction practices such as shoring measures (EPA, 1999). Planting soil should be placed in 18 inches or greater lifts and lightly compacted until the desired depth is reached. Since high canopy trees may be destroyed during maintenance the bioretention area should be vegetated to resemble a terrestrial forest community ecosystem that is dominated by understory trees. Three species each of both trees and shrubs are recommended to be planted at a rate of 2500 trees and shrubs per hectare (1000 per acre). For instance, a 15 foot (4.6 meter) by 40 foot (12.2 meter) bioretention area (600 square feet or 55.75 square meters) would require 14 trees and shrubs. The shrub-to-tree ratio should be 2:1 to 3:1.

Trees and shrubs should be planted when conditions are favorable. Vegetation should be watered at the end of each day for fourteen days following its planting. Plant species tolerant of pollutant loads and varying wet and dry conditions should be used in the bioretention area.

The designer should assess aesthetics, site layout, and maintenance requirements when selecting plant species. Adjacent non-native invasive species should be identified and the designer should take measures, such as providing a soil breach to eliminate the threat of these species invading the bioretention area. Regional landscaping manuals should be consulted to ensure that the planting of the bioretention area meets the landscaping requirements established by the local authorities. The designers should evaluate the best placement of vegetation within the bioretention area. Plants should be placed at irregular intervals to replicate a natural forest. Trees should be placed on the perimeter of the area to provide shade and shelter from the wind. Trees and shrubs can be sheltered from damaging flows if they are placed away from the path of the incoming runoff. In cold climates, species that are more tolerant to cold winds, such as evergreens, should be placed in windier areas of the site.

Following placement of the trees and shrubs, the ground cover and/or mulch should be established. Ground cover such as grasses or legumes can be planted at the beginning of the growing season. Mulch should be placed immediately after trees and shrubs are planted. Two to 3 inches (5 to 7.6 cm) of commercially-available fine shredded hardwood mulch or shredded hardwood chips should be applied to the bioretention area to protect from erosion.

Maintenance

The primary maintenance requirement for bioretention areas is that of inspection and repair or replacement of the treatment area's components. Generally, this involves nothing more than the routine periodic maintenance that is required of any landscaped area. Plants that are appropriate for the site, climatic, and watering conditions should be selected for use in the bioretention cell. Appropriately selected plants will aide in reducing fertilizer, pesticide, water, and overall maintenance requirements. Bioretention system components should blend over time through plant and root growth, organic decomposition, and the development of a natural

soil horizon. These biologic and physical processes over time will lengthen the facility's life span and reduce the need for extensive maintenance.

Routine maintenance should include a biannual health evaluation of the trees and shrubs and subsequent removal of any dead or diseased vegetation (EPA, 1999). Diseased vegetation should be treated as needed using preventative and low-toxic measures to the extent possible. BMPs have the potential to create very attractive habitats for mosquitoes and other vectors because of highly organic, often heavily vegetated areas mixed with shallow water. Routine inspections for areas of standing water within the BMP and corrective measures to restore proper infiltration rates are necessary to prevent creating mosquito and other vector habitat. In addition, bioretention BMPs are susceptible to invasion by aggressive plant species such as cattails, which increase the chances of water standing and subsequent vector production if not routinely maintained.

In order to maintain the treatment area's appearance it may be necessary to prune and weed. Furthermore, mulch replacement is suggested when erosion is evident or when the site begins to look unattractive. Specifically, the entire area may require mulch replacement every two to three years, although spot mulching may be sufficient when there are random void areas. Mulch replacement should be done prior to the start of the wet season.

New Jersey's Department of Environmental Protection states in their bioretention systems standards that accumulated sediment and debris removal (especially at the inflow point) will normally be the primary maintenance function. Other potential tasks include replacement of dead vegetation, soil pH regulation, erosion repair at inflow points, mulch replenishment, unclogging the underdrain, and repairing overflow structures. There is also the possibility that the cation exchange capacity of the soils in the cell will be significantly reduced over time. Depending on pollutant loads, soils may need to be replaced within 5-10 years of construction (LID, 2000).

Cost

Construction Cost

Construction cost estimates for a bioretention area are slightly greater than those for the required landscaping for a new development (EPA, 1999). A general rule of thumb (Coffman, 1999) is that residential bioretention areas average about $3 to $4 per square foot, depending on soil conditions and the density and types of plants used. Commercial, industrial and institutional site costs can range between $10 to $40 per square foot, based on the need for control structures, curbing, storm drains and underdrains.

Retrofitting a site typically costs more, averaging $6,500 per bioretention area. The higher costs are attributed to the demolition of existing concrete, asphalt, and existing structures and the replacement of fill material with planting soil. The costs of retrofitting a commercial site in Maryland, Kettering Development, with 15 bioretention areas were estimated at $111,600.

In any bioretention area design, the cost of plants varies substantially and can account for a significant portion of the expenditures. While these cost estimates are slightly greater than those of typical landscaping treatment (due to the increased number of plantings, additional soil excavation, backfill material, use of underdrains etc.), those landscaping expenses that would be required regardless of the bioretention installation should be subtracted when determining the net cost.

Perhaps of most importance, however, the cost savings compared to the use of traditional structural stormwater conveyance systems makes bioretention areas quite attractive financially. For example, the use of bioretention can decrease the cost required for constructing stormwater conveyance systems at a site. A medical office building in Maryland was able to reduce the amount of storm drain pipe that was needed from 800 to 230 feet - a cost savings of $24,000 (PGDER, 1993). And a new residential development spent a total of approximately $100,000 using bioretention cells on each lot instead of nearly $400,000 for the traditional stormwater ponds that were originally planned (Rappahanock,). Also, in residential areas, stormwater management controls become a part of each property owner's landscape, reducing the public burden to maintain large centralized facilities.

Maintenance Cost

The operation and maintenance costs for a bioretention facility will be comparable to those of typical landscaping required for a site. Costs beyond the normal landscaping fees will include the cost for testing the soils and may include costs for a sand bed and planting soil.

References and Sources of Additional Information

Coffman, L.S., R. Goo and R. Frederick, 1999: Low impact development: an innovative alternative approach to stormwater management. Proceedings of the 26th Annual Water Resources Planning and Management Conference ASCE, June 6-9, Tempe, Arizona.

Davis, A.P., Shokouhian, M., Sharma, H. and Minami, C., "Laboratory Study of Biological Retention (Bioretention) for Urban Stormwater Management," *Water Environ. Res.*, 73(1), 5-14 (2001).

Davis, A.P., Shokouhian, M., Sharma, H., Minami, C., and Winogradoff, D. "Water Quality Improvement through Bioretention: Lead, Copper, and Zinc," *Water Environ. Res.*, accepted for publication, August 2002.

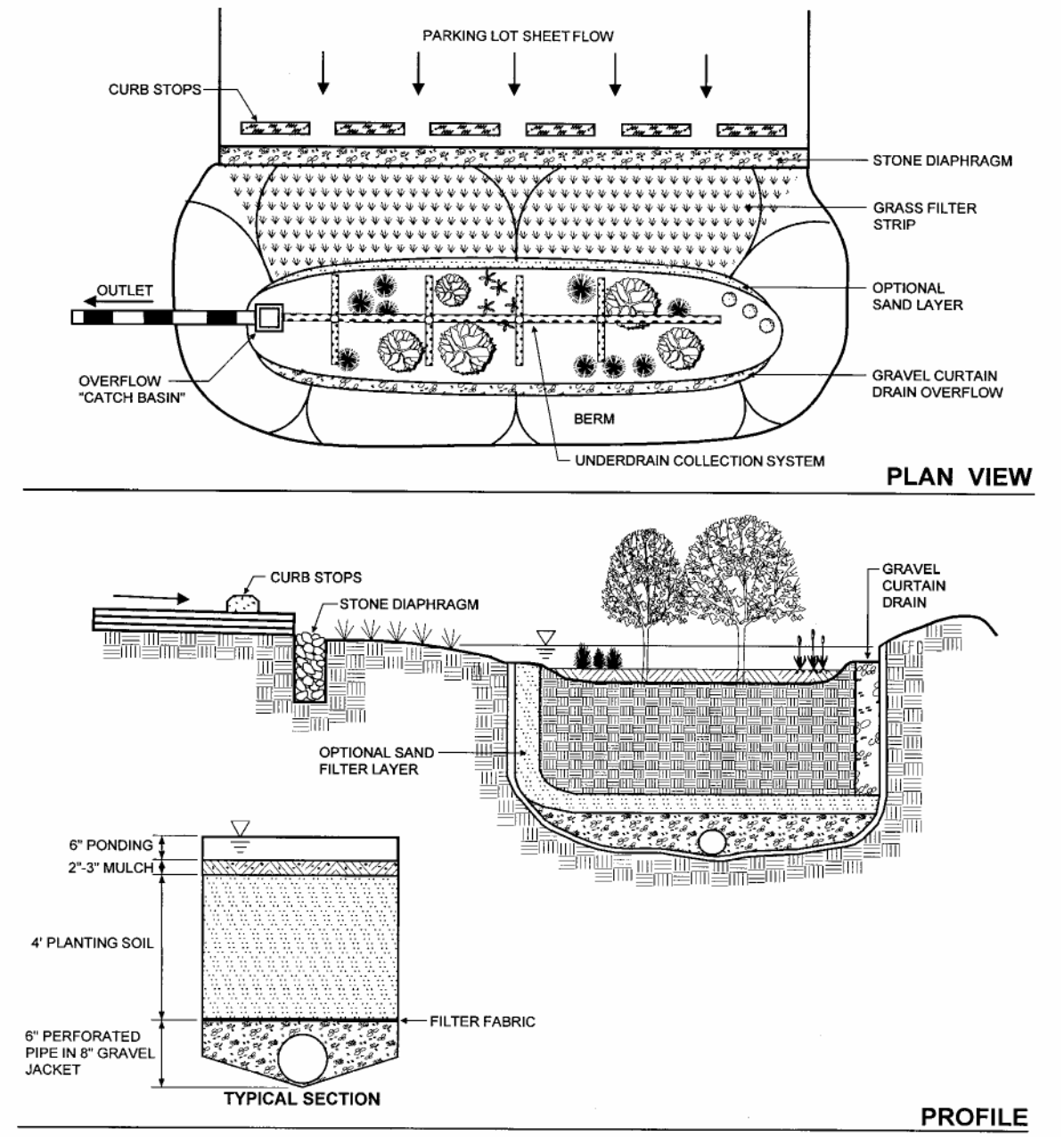
Kim, H., Seagren, E.A., and Davis, A.P., "Engineered Bioretention for Removal of Nitrate from Stormwater Runoff," *WEFTEC 2000 Conference Proceedings on CDROM Research Symposium, Nitrogen Removal*, Session 19, Anaheim CA, October 2000.

Hsieh, C.-h. and Davis, A.P. "Engineering Bioretention for Treatment of Urban Stormwater Runoff," *Watersheds 2002, Proceedings on CDROM Research Symposium*, Session 15, Ft. Lauderdale, FL, Feb. 2002.

Prince George's County Department of Environmental Resources (PGDER), 1993. Design Manual for Use of *Bioretention in Stormwater Management*. Division of Environmental Management, Watershed Protection Branch. Landover, MD.

U.S. EPA Office of Water, 1999. Stormwater Technology Fact Sheet: Bioretention. EPA 832-F-99-012.

Weinstein, N. Davis, A.P. and Veeramachaneni, R. "Low Impact Development (LID) Stormwater Management Approach for the Control of Diffuse Pollution from Urban Roadways," *5th International Conference Diffuse/Nonpoint Pollution and Watershed Management Proceedings*, C.S. Melching and Emre Alp, Eds. 2001 International Water Association



Schematic of a Bioretention Facility (MDE, 2000)

Non-Stormwater Discharges SC-10



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

Non-stormwater discharges are those flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include car washing, air conditioner condensate, etc. However there are certain non-stormwater discharges that pose environmental concern. These discharges may originate from illegal dumping or from internal floor drains, appliances, industrial processes, sinks, and toilets that are connected to the nearby storm drainage system. These discharges (which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains. They can generally be detected through a combination of detection and elimination. The ultimate goal is to effectively eliminate non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of pollutants on streets and into the storm drain system and creeks.

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Approach

Initially the industry must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is in the elimination of non-stormwater discharges.

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Pollution Prevention

- Ensure that used oil, used antifreeze, and hazardous chemical recycling programs are being implemented. Encourage litter control.

Suggested Protocols

Recommended Complaint Investigation Equipment

- Field Screening Analysis
  - pH paper or meter
  - Commercial stormwater pollutant screening kit that can detect for reactive phosphorus, nitrate nitrogen, ammonium nitrogen, specific conductance, and turbidity
  - Sample jars
  - Sample collection pole
  - A tool to remove access hole covers
- Laboratory Analysis
  - Sample cooler
  - Ice
  - Sample jars and labels
  - Chain of custody forms
- Documentation
  - Camera
  - Notebook
  - Pens
  - Notice of Violation forms
  - Educational materials

General

- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled or demarcated next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.

- See SC44 Stormwater Drainage System Maintenance for additional information.

Illicit Connections

- Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- Isolate problem areas and plug illicit discharge points.
- Locate and evaluate all discharges to the industrial storm drain system.

Visual Inspection and Inventory

- Inventory and inspect each discharge point during dry weather.
- Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system. Also, non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.
- Inspect the path of floor drains in older buildings.

Smoke Testing

- Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two systems.
- During dry weather the stormwater collection system is filled with smoke and then traced to sources. The appearance of smoke at the base of a toilet indicates that there may be a connection between the sanitary and the stormwater system.

Dye Testing

- A dye test can be performed by simply releasing a dye into either your sanitary or process wastewater system and examining the discharge points from the stormwater collection system for discoloration.

TV Inspection of Drainage System

- TV Cameras can be employed to visually identify illicit connections to the industrial storm drainage system.

Illegal Dumping

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.

- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.

Reporting

- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Document and report annually the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.

Training

- Training of technical staff in identifying and documenting illegal dumping incidents is required.
- Consider posting the quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.
- Conduct spill response drills annually (if no events occurred to evaluate your plan) in cooperation with other industries.
- When a responsible party is identified, educate the party on the impacts of his or her actions.

Spill Response and Prevention

- See SC11 Spill Prevention Control and Cleanup.

Other Considerations

- Many facilities do not have accurate, up-to-date schematic drawings.

Requirements

Costs (including capital and operation & maintenance)

- The primary cost is for staff time and depends on how aggressively a program is implemented.
- Cost for containment and disposal is borne by the discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Indoor floor drains may require re-plumbing if cross-connections to storm drains are detected.

Maintenance (including administrative and staffing)

- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Further Detail of the BMP

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. All of these wastes cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots

- Types and quantities (in some cases) of wastes
- Patterns in time of occurrence (time of day/night, month, or year)
- Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
- Responsible parties

One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

What constitutes a "non-stormwater" discharge?

- Non-stormwater discharges to the stormwater collection system may include any water used directly in the manufacturing process (process wastewater), air conditioning condensate and coolant, non-contact cooling water, cooling equipment condensate, outdoor secondary containment water, vehicle and equipment wash water, sink and drinking fountain wastewater, sanitary wastes, or other wastewaters.

Permit Requirements

- Facilities subject to stormwater permit requirements must include a certification that the stormwater collection system has been tested or evaluated for the presence of non-stormwater discharges. The State's General Industrial Stormwater Permit requires that non-stormwater discharges be eliminated prior to implementation of the facility's SWPPP.

Performance Evaluation

- Review annually internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Outdoor Loading/Unloading SC-30



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

The loading/unloading of materials usually takes place outside on docks or terminals; therefore, materials spilled, leaked, or lost during loading/unloading may collect in the soil or on other surfaces and have the potential to be carried away by stormwater runoff or when the area is cleaned. Additionally, rainfall may wash pollutants from machinery used to unload or move materials. Implementation of the following protocols will prevent or reduce the discharge of pollutants to stormwater from outdoor loading/unloading of materials.

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Keep accurate maintenance logs to evaluate materials removed and improvements made.
- Park tank trucks or delivery vehicles in designated areas so that spills or leaks can be contained.
- Limit exposure of material to rainfall whenever possible.
- Prevent stormwater run-on.
- Check equipment regularly for leaks.

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Suggested Protocols

Loading and Unloading – General Guidelines

- Develop an operations plan that describes procedures for loading and/or unloading.
- Conduct loading and unloading in dry weather if possible.
- Cover designated loading/unloading areas to reduce exposure of materials to rain.
- Consider placing a seal or door skirt between delivery vehicles and building to prevent exposure to rain.
- Design loading/unloading area to prevent stormwater run-on, which would include grading or berming the area, and position roof downspouts so they direct stormwater away from the loading/unloading areas.
- Have employees load and unload all materials and equipment in covered areas such as building overhangs at loading docks if feasible.
- Load/unload only at designated loading areas.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans can be made specifically for railroad tracks. Drip pans must be cleaned periodically, and drip collected materials must be disposed of properly.
- Pave loading areas with concrete instead of asphalt.
- Avoid placing storm drains in the area.
- Grade and/or berm the loading/unloading area to a drain that is connected to a deadend.

Inspection

- Check loading and unloading equipment regularly for leaks, including valves, pumps, flanges and connections.
- Look for dust or fumes during loading or unloading operations.

Training

- Train employees (e.g., fork lift operators) and contractors on proper spill containment and cleanup.
- Have employees trained in spill containment and cleanup present during loading/unloading.
- Train employees in proper handling techniques during liquid transfers to avoid spills.
- Make sure forklift operators are properly trained on loading and unloading procedures.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Contain leaks during transfer.
- Store and maintain appropriate spill cleanup materials in a location that is readily accessible and known to all and ensure that employees are familiar with the site's spill control plan and proper spill cleanup procedures.
- Have an emergency spill cleanup plan readily available.
- Use drip pans or comparable devices when transferring oils, solvents, and paints.

Other Considerations (Limitations and Regulations)

- Space and time limitations may preclude all transfers from being performed indoors or under cover.
- It may not be possible to conduct transfers only during dry weather.

Requirements

Costs

Costs should be low except when covering a large loading/unloading area.

Maintenance

- Conduct regular inspections and make repairs as necessary. The frequency of repairs will depend on the age of the facility.
- Check loading and unloading equipment regularly for leaks.
- Conduct regular broom dry-sweeping of area.

Supplemental Information

Further Detail of the BMP

Special Circumstances for Indoor Loading/Unloading of Materials

Loading or unloading of liquids should occur in the manufacturing building so that any spills that are not completely retained can be discharged to the sanitary sewer, treatment plant, or treated in a manner consistent with local sewer authorities and permit requirements.

- For loading and unloading tank trucks to above and below ground storage tanks, the following procedures should be used:
  - The area where the transfer takes place should be paved. If the liquid is reactive with the asphalt, Portland cement should be used to pave the area.
  - The transfer area should be designed to prevent run-on of stormwater from adjacent areas. Sloping the pad and using a curb, like a speed bump, around the uphill side of the transfer area should reduce run-on.

- The transfer area should be designed to prevent runoff of spilled liquids from the area. Sloping the area to a drain should prevent runoff. The drain should be connected to a dead-end sump or to the sanitary sewer. A positive control valve should be installed on the drain.

- For transfer from rail cars to storage tanks that must occur outside, use the following procedures:

  - Drip pans should be placed at locations where spillage may occur, such as hose connections, hose reels, and filler nozzles. Use drip pans when making and breaking connections.

  - Drip pan systems should be installed between the rails to collect spillage from tank cars.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Building & Grounds Maintenance SC-41



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	

Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, abnormal pH, and oils and greases. Utilizing the protocols in this fact sheet will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Encourage proper lawn management and landscaping, including use of native vegetation.

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- Encourage use of Integrated Pest Management techniques for pest control.
- Encourage proper onsite recycling of yard trimmings.
- Recycle residual paints, solvents, lumber, and other material as much as possible.

Suggested Protocols

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.
- If soaps or detergents are not used, and the surrounding area is paved, wash runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.
- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.

Landscaping Activities

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures on exposed soils.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.
- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. If directed off-site, you should direct the water through hay bales and filter fabric or use other sediment filters or traps.
- Store toxic material under cover during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Mowing, Trimming, and Planting

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures when soils are exposed.
- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Consider an alternative approach when bailing out muddy water: do not put it in the storm drain; pour over landscaped areas.
- Use hand weeding where practical.

Fertilizer and Pesticide Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Use less toxic pesticides that will do the job when applicable. Avoid use of copper-based pesticides if possible.
- Do not use pesticides if rain is expected.
- Do not mix or prepare pesticides for application near storm drains.
- Use the minimum amount needed for the job.
- Calibrate fertilizer distributors to avoid excessive application.
- Employ techniques to minimize off-target application (e.g., spray drift) of pesticides, including consideration of alternative application techniques.
- Apply pesticides only when wind speeds are low.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Irrigate slowly to prevent runoff and then only as much as is needed.
- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Dispose of empty pesticide containers according to the instructions on the container label.

- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

Training

- Educate and train employees on pesticide use and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the nature of the staff.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials, such as brooms, dustpans, and vacuum sweepers (if desired) near the storage area where it will be readily accessible.
- Have employees trained in spill containment and cleanup present during the loading/unloading of dangerous wastes, liquid chemicals, or other materials.
- Familiarize employees with the Spill Prevention Control and Countermeasure Plan.
- Clean up spills immediately.

Other Considerations

Alternative pest/weed controls may not be available, suitable, or effective in many cases.

Requirements

Costs

- Cost will vary depending on the type and size of facility.
- Overall costs should be low in comparison to other BMPs.

Maintenance

Sweep paved areas regularly to collect loose particles. Wipe up spills with rags and other absorbent material immediately, do not hose down the area to a storm drain.

Supplemental Information

Further Detail of the BMP

Fire Sprinkler Line Flushing

Building fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water, though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping, but it is subject to rusting and results in lower quality water. Initially, the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, poly-phosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time (typically a year) and between flushes may accumulate iron, manganese, lead, copper, nickel, and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Mobile Cleaners Pilot Program: Final Report. 1997. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Parking/Storage Area Maintenance SC-43



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking areas and storage areas to reduce potential for pollutant discharge to receiving waters. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook)
- Keep accurate maintenance logs to evaluate BMP implementation.

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SC-43 Parking/Storage Area Maintenance

Suggested Protocols

General

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low quantities.
- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.
- Discharge soapy water remaining in mop or wash buckets to the sanitary sewer through a sink, toilet, clean-out, or wash area with drain.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel, and dispose of litter in the trash.

Surface Cleaning

- Use dry cleaning methods (e.g., sweeping, vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system if possible.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- Follow the procedures below if water is used to clean surfaces:
  - Block the storm drain or contain runoff.
  - Collect and pump wash water to the sanitary sewer or discharge to a pervious surface. Do not allow wash water to enter storm drains.
  - Dispose of parking lot sweeping debris and dirt at a landfill.
- Follow the procedures below when cleaning heavy oily deposits:
  - Clean oily spots with absorbent materials.
  - Use a screen or filter fabric over inlet, then wash surfaces.

- Do not allow discharges to the storm drain.
- Vacuum/pump discharges to a tank or discharge to sanitary sewer.
- Appropriately dispose of spilled materials and absorbents.

Surface Repair

- Preheat, transfer or load hot bituminous material away from storm drain inlets.
- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.
- Cover and seal nearby storm drain inlets where applicable (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.
- Use only as much water as necessary for dust control, to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Inspection

- Have designated personnel conduct inspections of parking facilities and stormwater conveyance systems associated with parking facilities on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up fluid spills immediately with absorbent rags or material.
- Dispose of spilled material and absorbents properly.

Other Considerations

Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

SC-43 Parking/Storage Area Maintenance

Requirements

Costs

Cleaning/sweeping costs can be quite large. Construction and maintenance of stormwater structural controls can be quite expensive as well.

Maintenance

- Sweep parking lot regularly to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities regularly to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

Supplemental Information

Further Detail of the BMP

Surface Repair

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Only use only as much water as is necessary for dust control to avoid runoff.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Drainage System Maintenance SC-44



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and stormwater that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	

Approach

Pollution Prevention

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

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- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
  - Is there evidence of spills such as paints, discoloring, etc?

- Are there any odors associated with the drainage system?
- Record locations of apparent illegal discharges/illicit connections?
- Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- Eliminate the discharge once the origin of flow is established.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

- OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).
- Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.
- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.
- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.
- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:
  - Purchase and installation of signs.
  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.
  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.
  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

Supplemental Information

Further Detail of the BMP

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Ferguson, B.K. 1991. Urban Stream Reclamation, p. 324-322, Journal of Soil and Water Conservation.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

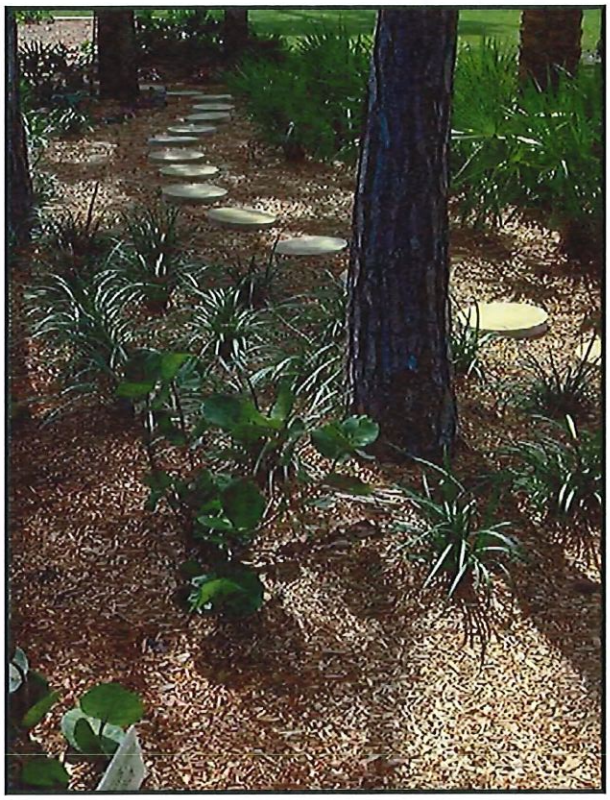
Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Storm Drain System Cleaning. On line:
http://www.epa.gov/npdes/menuofbmps/poll_16.htm

Site Design & Landscape Planning SD-10



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- ☑ Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Each project site possesses unique topographic, hydrologic, and vegetative features, some of which are more suitable for development than others. Integrating and incorporating appropriate landscape planning methodologies into the project design is the most effective action that can be done to minimize surface and groundwater contamination from stormwater.

Approach

Landscape planning should couple consideration of land suitability for urban uses with consideration of community goals and projected growth. Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for site design and landscapes planning should conform to applicable standards and specifications of agencies with jurisdiction and be consistent with applicable General Plan and Local Area Plan policies.

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Designing New Installations

Begin the development of a plan for the landscape unit with attention to the following general principles:

- Formulate the plan on the basis of clearly articulated community goals. Carefully identify conflicts and choices between retaining and protecting desired resources and community growth.
- Map and assess land suitability for urban uses. Include the following landscape features in the assessment: wooded land, open unwooded land, steep slopes, erosion-prone soils, foundation suitability, soil suitability for waste disposal, aquifers, aquifer recharge areas, wetlands, floodplains, surface waters, agricultural lands, and various categories of urban land use. When appropriate, the assessment can highlight outstanding local or regional resources that the community determines should be protected (e.g., a scenic area, recreational area, threatened species habitat, farmland, fish run). Mapping and assessment should recognize not only these resources but also additional areas needed for their sustenance.

Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Conserve Natural Areas during Landscape Planning

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

- Cluster development on least-sensitive portions of a site while leaving the remaining land in a natural undisturbed condition.
- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
- Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
- Promote natural vegetation by using parking lot islands and other landscaped areas.
- Preserve riparian areas and wetlands.

Maximize Natural Water Storage and Infiltration Opportunities Within the Landscape Unit

- Promote the conservation of forest cover. Building on land that is already deforested affects basin hydrology to a lesser extent than converting forested land. Loss of forest cover reduces interception storage, detention in the organic forest floor layer, and water losses by evapotranspiration, resulting in large peak runoff increases and either their negative effects or the expense of countering them with structural solutions.
- Maintain natural storage reservoirs and drainage corridors, including depressions, areas of permeable soils, swales, and intermittent streams. Develop and implement policies and

regulations to discourage the clearing, filling, and channelization of these features. Utilize them in drainage networks in preference to pipes, culverts, and engineered ditches.

- Evaluating infiltration opportunities by referring to the stormwater management manual for the jurisdiction and pay particular attention to the selection criteria for avoiding groundwater contamination, poor soils, and hydrogeological conditions that cause these facilities to fail. If necessary, locate developments with large amounts of impervious surfaces or a potential to produce relatively contaminated runoff away from groundwater recharge areas.

Protection of Slopes and Channels during Landscape Design

- Convey runoff safely from the tops of slopes.
- Avoid disturbing steep or unstable slopes.
- Avoid disturbing natural channels.
- Stabilize disturbed slopes as quickly as possible.
- Vegetate slopes with native or drought tolerant vegetation.
- Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
- Stabilize temporary and permanent channel crossings as quickly as possible, and ensure that increases in run-off velocity and frequency caused by the project do not erode the channel.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.
- Line on-site conveyance channels where appropriate, to reduce erosion caused by increased flow velocity due to increases in tributary impervious area. The first choice for linings should be grass or some other vegetative surface, since these materials not only reduce runoff velocities, but also provide water quality benefits from filtration and infiltration. If velocities in the channel are high enough to erode grass or other vegetative linings, riprap, concrete, soil cement, or geo-grid stabilization are other alternatives.
- Consider other design principles that are comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Redevelopment may present significant opportunity to add features which had not previously been implemented. Examples include incorporation of depressions, areas of permeable soils, and swales in newly redeveloped areas. While some site constraints may exist due to the status of already existing infrastructure, opportunities should not be missed to maximize infiltration, slow runoff, reduce impervious areas, disconnect directly connected impervious areas.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Stormwater Management Manual for Western Washington, Washington State Department of Ecology, August 2001.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Efficient Irrigation SD-12



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

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- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Storm Drain Signage SD-13



Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include "NO DUMPING

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– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Trash Storage Areas SD-32

Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.

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- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Outdoor Material Storage Areas SD-34



Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ✓ Contain Pollutant
- Collect and Convey

Description

Proper design of outdoor storage areas for materials reduces opportunity for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter the stormwater conveyance system. Materials may be in the form of raw products, by-products, finished products, and waste products. The type of pollutants associated with the materials will vary depending on the type of commercial or industrial activity.

Approach

Outdoor storage areas require a drainage approach different from the typical infiltration/detention strategy. In outdoor storage areas, infiltration is discouraged. Containment is encouraged. Preventative measures include enclosures, secondary containment structures and impervious surfaces.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Some materials are more of a concern than others. Toxic and hazardous materials must be prevented from coming in contact with stormwater. Non-toxic or non-hazardous materials do not have to be prevented from stormwater contact. However, these materials may have toxic effects on receiving waters if allowed to be discharged with stormwater in significant quantities. Accumulated material on an impervious surface could result in significant impact on the rivers or streams that receive the runoff.

Material may be stored in a variety of ways, including bulk piles, containers, shelving, stacking, and tanks. Stormwater contamination may be prevented by eliminating the possibility of stormwater contact with the material storage areas either through diversion, cover, or capture of the stormwater. Control measures may also include minimizing the storage area. Design requirements

CASQA California Stormwater Quality Association

for material storage areas are governed by Building and Fire Codes, and by current City or County ordinances and zoning requirements. Control measures are site specific, and must meet local agency requirements.

Designing New Installations

Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the stormwater conveyance system, the following structural or treatment BMPS should be considered:

- Materials with the potential to contaminate stormwater should be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the stormwater conveyance system, or (2) protected by secondary containment structures such as berms, dikes, or curbs.
- The storage area should be paved and sufficiently impervious to contain leaks and spills.
- The storage area should slope towards a dead-end sump to contain spills and direct runoff from downspouts/roofs should be directed away from storage areas.
- The storage area should have a roof or awning that extends beyond the storage area to minimize collection of stormwater within the secondary containment area. A manufactured storage shed may be used for small containers.

Note that the location(s) of installations of where these preventative measures will be employed must be included on the map or plans identifying BMPs.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Stormwater and non-stormwater will accumulate in containment areas and sumps with impervious surfaces. Contaminated accumulated water must be disposed of in accordance with applicable laws and cannot be discharged directly to the storm drain or sanitary sewer system without the appropriate permits.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Fueling Areas SD-30



Photo Credit: Geoff Brosseau

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- ☑ Collect and Convey

Description

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the stormwater conveyance system. Spills at vehicle and equipment fueling areas can be a significant source of pollution because fuels contain toxic materials and heavy metals that are not easily removed by stormwater treatment devices.

Approach

Project plans must be developed for cleaning near fuel dispensers, emergency spill cleanup, containment, and leak prevention.

Suitable Applications

Appropriate applications include commercial, industrial, and any other areas planned to have fuel dispensing equipment, including retail gasoline outlets, automotive repair shops, and major non-retail dispensing areas.

Design Considerations

Design requirements for fueling areas are governed by Building and Fire Codes and by current local agency ordinances and zoning requirements. Design requirements described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements.

Designing New Installations

Covering

Fuel dispensing areas should provide an overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area. The fueling area should drain to the project's treatment control BMP(s) prior to discharging to the stormwater conveyance system. Note - If fueling large equipment or vehicles that would prohibit the use of covers or roofs, the fueling island should be designed to sufficiently accommodate the larger vehicles and equipment and to prevent stormwater run-on and runoff. Grade to direct stormwater to a dead-end sump.

Surfacing

Fuel dispensing areas should be paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete should be prohibited. Use asphalt sealant to protect asphalt paved areas surrounding the fueling area. This provision may be made to sites that have pre-existing asphalt surfaces.

The concrete fuel dispensing area should be extended a minimum of 6.5 ft from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 ft, whichever is less.

Grading/Contouring

Dispensing areas should have an appropriate slope to prevent ponding, and be separated from the rest of the site by a grade break that prevents run-on of urban runoff. (Slope is required to be 2 to 4% in some jurisdictions' stormwater management and mitigation plans.)

Fueling areas should be graded to drain toward a dead-end sump. Runoff from downspouts/roofs should be directed away from fueling areas. Do not locate storm drains in the immediate vicinity of the fueling area.

Redeveloping Existing Installations

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Additional Information

- In the case of an emergency, provide storm drain seals, such as isolation valves, drain plugs, or drain covers, to prevent spills or contaminated stormwater from entering the stormwater conveyance system.

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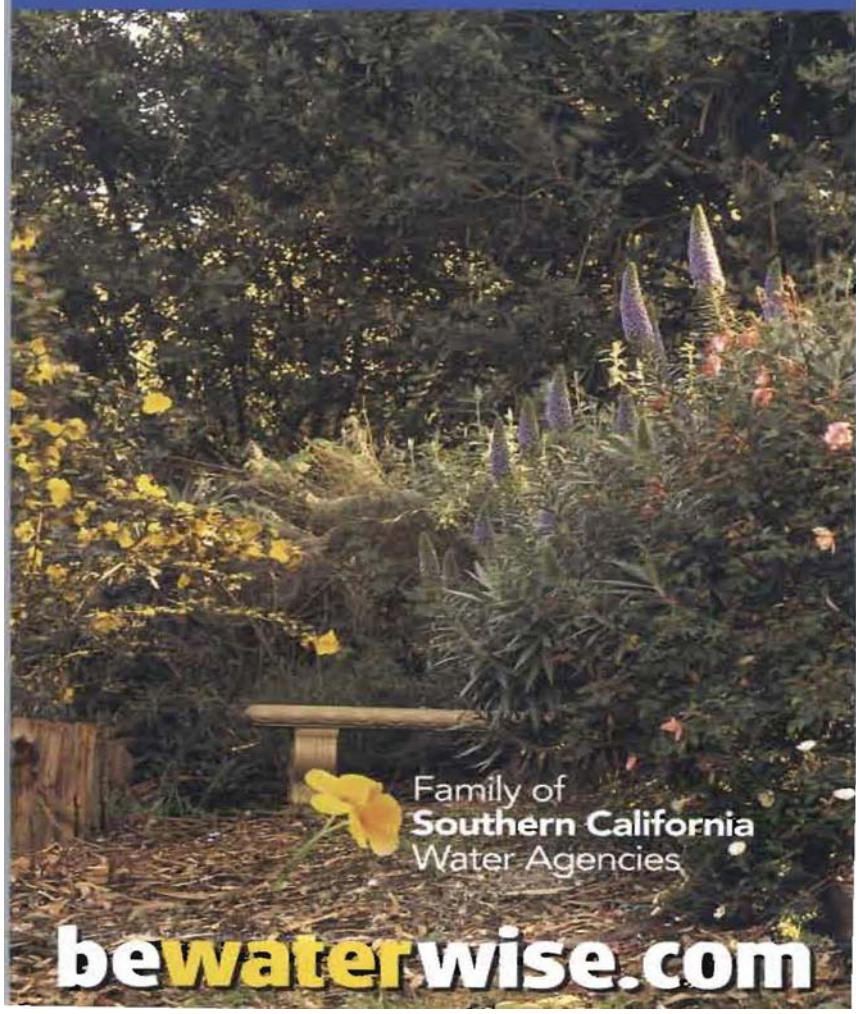
10 Ways to Save Water Outdoors



TIP #1 The average homeowner uses twice the amount of water needed to keep plants healthy. Use the watering calculator and index at **bewaterwise.com** to know exactly how much water your plants need.

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bewaterwise.com

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A Citizen's Guide to Understanding Stormwater

EPA 833-B-03-002

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What is stormwater runoff?



Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.



Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

Why is stormwater runoff a problem?

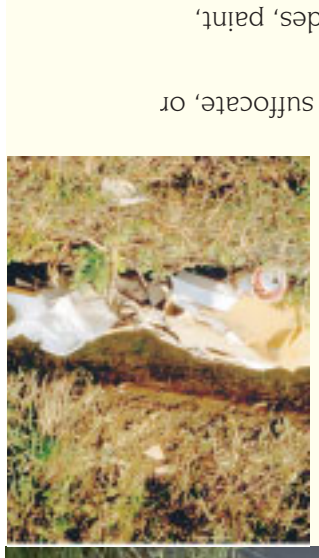


The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.







Stormwater Pollution Solutions



Residential

Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care



Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

Septic systems



Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Auto care



Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Pet waste



Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.



Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.



Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.



Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.



Commercial

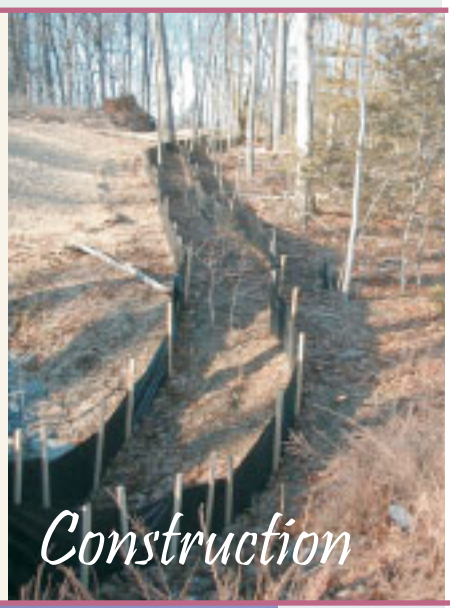
Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Construction

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.





Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.



- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
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Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
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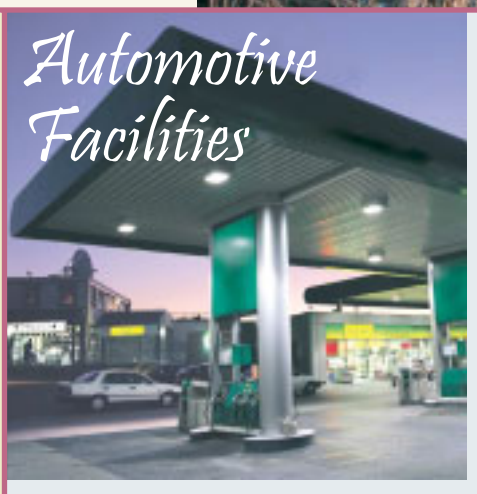

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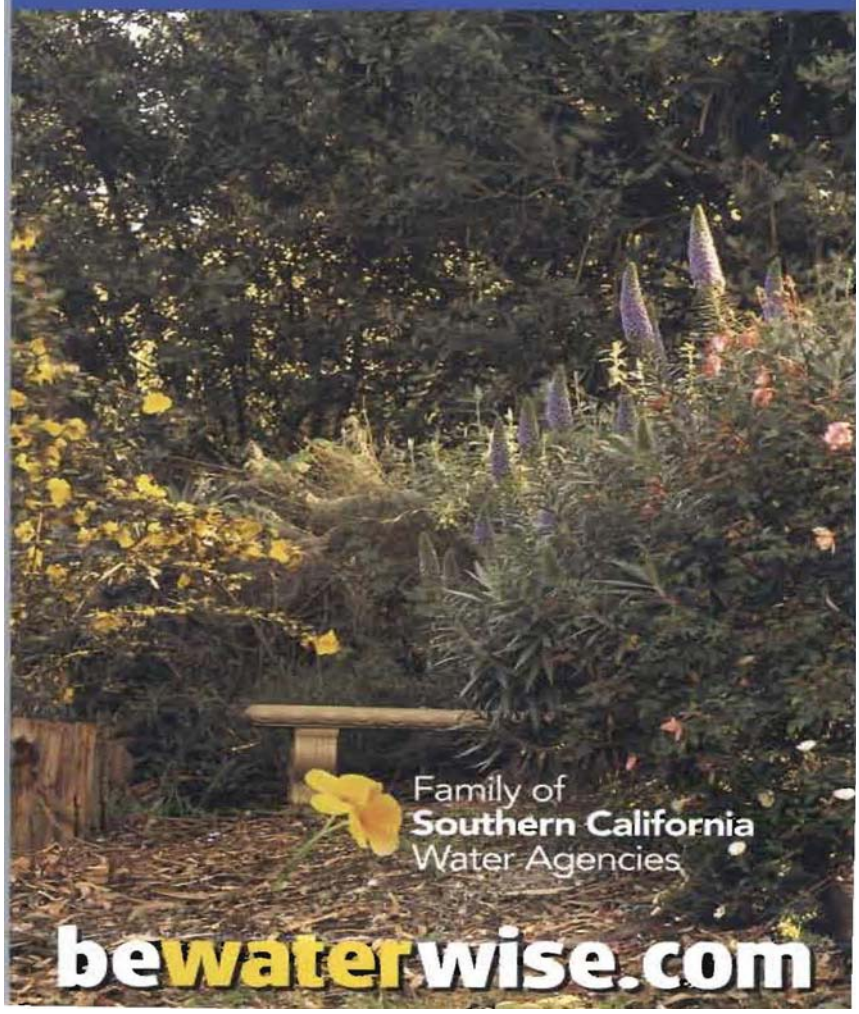

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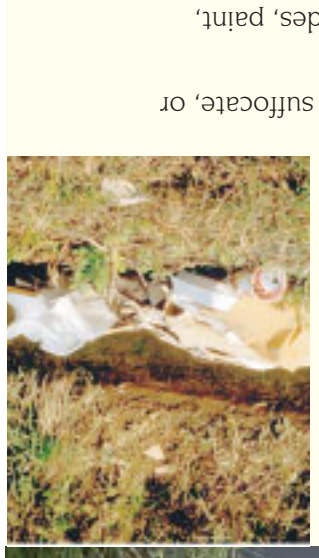



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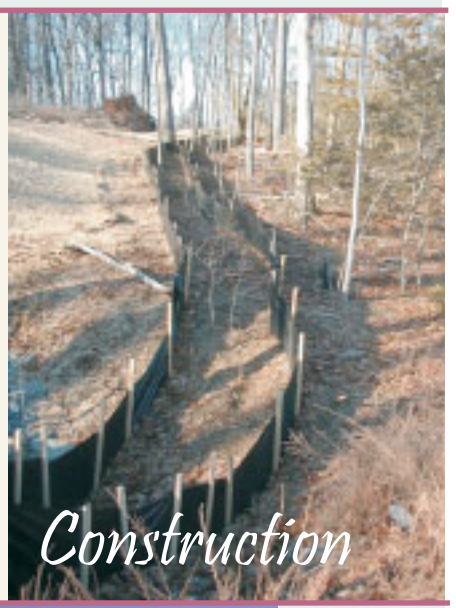



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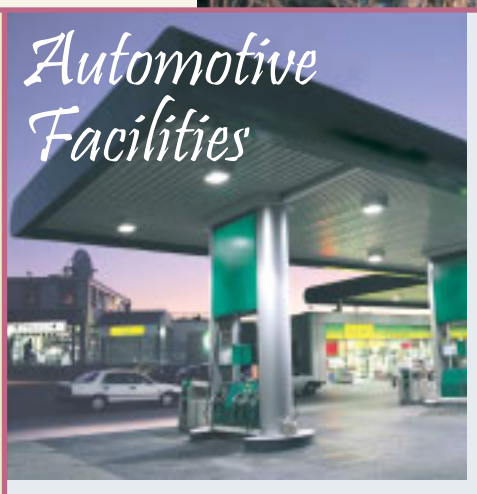

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- Install and maintain oil/water separators.



Landscaping and garden maintenance activities can be major contributors to water pollution. Soils, yard wastes, over-watering and garden chemicals become part of the urban runoff mix that winds its way through streets, gutters and storm drains before entering lakes, rivers, streams, etc. Urban runoff pollution contaminates water and harms aquatic life!

In Riverside County, report illegal discharges into the storm drain, call
1-800-506-2555
"Only Rain Down the Storm Drain"

Important Links:

Riverside County Household Hazardous Waste Collection Information
1-800-304-2226 or www.rivcowm.org

Riverside County Backyard Composting Program
1-800-366-SAVE

Integrated Pest Management (IPM) Solutions
www.ipm.ucdavis.edu

California Master Gardener Programs
www.mastergardeners.org
www.camastergardeners.ucdavis.edu

California Native Plant Society
www.cnps.org

The Riverside County "Only Rain Down the Storm Drain" Pollution Prevention Program gratefully acknowledges Orange County's Storm Water Program for their contribution to this brochure.

...Only Rain Down ...the Storm Drain

What you should know for... Landscape and Gardening

Best Management tips for:

- Professionals
- Novices
- Landscapers
- Gardeners
- Cultivators



Tips for Landscape & Gardening

This brochure will help you to get the most of your lawn and gardening efforts and keep our waterways clean. Clean waterways provide recreation, establish thriving fish habitats, secure safe sanctuaries for wildlife, and add beauty to our communities. NEVER allow gardening products or waste water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.



- Plant native vegetation to reduce the amount of water, fertilizers and pesticides applied to the landscape.
- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro-spray systems. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.



- Consider recycling your green waste and adding "nature's own fertilizer" to your lawn or garden.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.
- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains or sewers. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting.
- Try natural long-term common sense solutions first. Integrated Pest Management (IPM) can provide landscaping guidance and solutions, such as:
  - **Physical Controls** - Try hand picking, barriers, traps or caulking holes to control weeds and pests.
  - **Biological Controls** - Use predatory insects to control harmful pests.
  - **Chemical Controls** - Check out www.ipm.ucdavis.edu before using chemicals. Remember, all chemicals should be used cautiously and in moderation.
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Waste Collection Center to be recycled.
- *Dumping toxics into the street, gutter or storm drain is illegal!*

www.bewaterwise.com Great water conservation tips and drought tolerant garden designs.

www.ourwaterourworld.com Learn how to safely manage home and garden pests.

Additional information can also be found on the back of this brochure.

Helpful telephone numbers and links:

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REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555 or e-mail us at
fcnpdes@rcflood.org

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Online resources include:

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Stormwater Pollution

What you should know for...

Outdoor Cleaning Activities and Professional Mobile Service Providers



Storm drain pollution prevention information for:

- Car Washing / Mobile Detailers
- Window and Carpet Cleaners
- Power Washers
- Waterproofers / Street Sweepers
- Equipment cleaners or degreasers and all mobile service providers

Do you know where street flows actually go?

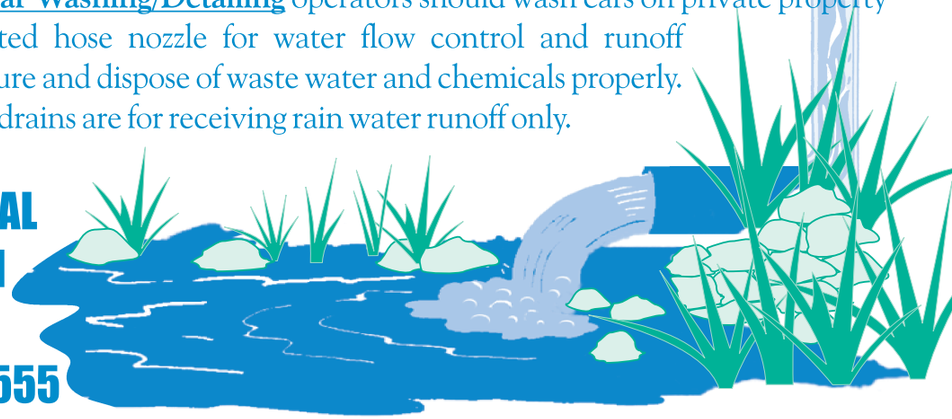
Storm drains are NOT connected to sanitary sewer systems and treatment plants!



The primary purpose of storm drains is to carry *rain* water away from developed areas to prevent flooding. Pollutants discharged to storm drains are transported directly into rivers, lakes and streams. Soaps, degreasers, automotive fluids, litter and a host of materials are washed off buildings, sidewalks, plazas and parking areas. Vehicles and equipment must be properly managed to prevent the pollution of local waterways.

Unintentional spills by mobile service operators can flow into storm drains and pollute our waterways. **Avoid mishaps.** *Always* have a **Spill Response Kit** on hand to clean up unintentional spills. Only emergency **Mechanical** repairs should be done in City streets, using drip pans for spills. **Plumbing** should be done on private property. Always store chemicals in a leak-proof container and keep covered when not in use. **Window/Power Washing** waste water shouldn't be released into the streets, but should be disposed of in a sanitary sewer, landscaped area or in the soil. Soiled **Carpet Cleaning** wash water should be filtered before being discharged into the sanitary sewer. Dispose of all filter debris properly. **Car Washing/Detailing** operators should wash cars on private property and use a regulated hose nozzle for water flow control and runoff prevention. Capture and dispose of waste water and chemicals properly. Remember, storm drains are for receiving rain water runoff only.

REPORT ILLEGAL STORM DRAIN DISPOSAL 1-800-506-2555



Help Protect Our Waterways!

Use these guidelines for Outdoor Cleaning Activities and Wash Water Disposal

Did you know that disposing of pollutants into the street, gutter, storm drain or body of water is *PROHIBITED* by law and can result in stiff penalties?

Best Management Practices

Waste wash water from Mechanics, Plumbers, Window/Power Washers, Carpet Cleaners, Car Washing and Mobile Detailing activities may contain significant quantities of motor oil, grease, chemicals, dirt, detergents, brake pad dust, litter and other materials.

Best Management Practices, or BMPs as they are known, are guides to prevent pollutants from entering the storm drains. ***Each of us*** can do our part to keep stormwater clean by using the suggested BMPs below:

Simple solutions for both light and heavy duty jobs:

Do...consider dry cleaning methods first such as a mop, broom, rag or wire brush. Always keep a spill response kit on site.

Do...prepare the work area before power cleaning by using sand bags, rubber mats, vacuum booms, containment pads or temporary berms to keep wash water away from the gutters and storm drains.

Do...use vacuums or other machines to remove and collect loose debris or litter before applying water.

Do...obtain the property owner's permission to dispose of ***small amounts*** of power washing waste water on to landscaped, gravel or unpaved surfaces.

Do...check your local sanitary sewer agency's policies on wash water disposal regulations before disposing of wash water into the sewer. (See list on reverse side)

Do...be aware that if discharging to landscape areas, soapy wash water may damage landscaping. Residual wash water may remain on paved surfaces to evaporate. Sweep up solid residuals and dispose of properly. Vacuum booms are another option for capturing and collecting wash water.

Do...check to see if local ordinances prevent certain activities.

Do not let...wash or waste water from sidewalk, plaza or building cleaning go into a street or storm drain.



Report illegal storm drain disposal
Call Toll Free
1-800-506-2555

Using Cleaning Agents

Try using biodegradable/phosphate-free products. They are easier on the environment, but don't confuse them with being toxic free. Soapy water entering the storm drain system can impact the delicate aquatic environment.



When cleaning surfaces with a ***high-pressure washer*** or ***steam cleaner***, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning can loosen additional material that can contaminate local waterways.

Think Water Conservation

Minimize water use by using high pressure, low volume nozzles. Be sure to check all hoses for leaks. Water is a precious resource, don't let it flow freely and be sure to shut it off in between uses.

Screening Wash Water

Conduct thorough dry cleanup before washing exterior surfaces, such as buildings and decks ***with loose paint***, sidewalks or plaza areas. Keep debris from entering the storm drain after cleaning by first passing the wash water through a "20 mesh" or finer screen to catch the solid materials, then dispose of the mesh in a refuse container. Do not let the remaining wash water enter a street, gutter or storm drain.

Drain Inlet Protection & Collection of Wash Water

- Prior to any washing, block all storm drains with an impervious barrier such as sandbags or berms, or seal the storm drain with plugs or other appropriate materials.
- Create a containment area with berms and traps or take advantage of a low spot to keep wash water contained.
- Wash vehicles and equipment on grassy or gravel areas so that the wash water can seep into the ground.
- Pump or vacuum up all wash water in the contained area.

Concrete/Coring/Saw Cutting and Drilling Projects

Protect any down-gradient inlets by using dry activity techniques whenever possible. If water is used, minimize the amount of water used during the coring/drilling or saw cutting process. Place a barrier of sandbags and/or absorbent berms to protect the storm drain inlet or watercourse. Use a shovel or wet vacuum to remove the residue from the pavement. Do not wash residue or particulate matter into a storm drain inlet or watercourse.

Saltwater Pools

- Salt water pools, although different from regular pools, are in fact, sanitized using chlorine. A salt-chlorine generator separates the chlorine and sodium molecules in salt and reintroduces them into the pool water. The same harmful effects of chlorine still apply.
- A salt water pool is still maintained with chemicals such as Muriatic acid, soda ash and sodium carbonate to help keep a proper pH, total Alkalinity, Calcium Hardness and Stabilizer levels.



- It may be illegal to discharge salt water to land. The salt may kill plants and the build-up of salt in soil puts animals, plants, and groundwater at risk. Consult your city representatives to determine local requirements regarding salt water drainage.

NEVER put unused chemicals into the trash, onto the ground or down a storm drain.

IMPORTANT: The discharge of pollutants into the street, gutter, storm drain system or waterways - without a permit or waiver - is strictly prohibited by local ordinances, state and federal law. Violations may result in monetary fines and enforcement actions.

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City of San Jacinto	(951) 654-4041
Coachella Valley Water District	(760) 398-2651
Desert Water Agency (Palm Springs)	(760) 323-4971
Eastern Municipal Water District	(951) 928-3777
Elsinore Valley Municipal Water District	(951) 674 3146
Elsinore Water District	(951) 674-2168
Farm Mutual Water Company	(951) 244-4198
Idyllwild Water District	(951) 659-2143
Indio Water Authority	(760) 391-4129
Jurupa Community Services District	(951) 685-7434
Lee Lake Water	(951) 658-3241
Mission Springs Water	(760) 329-6448
Rancho California Water District	(951) 296-6900
Ripley, CSA #62	(760) 922-4951
Riverside Co. Service Area #51	(760) 227-3203
Rubidoux Community Services District	(951) 684-7580
Valley Sanitary District	(760) 347-2356
Western Municipal Water District	(951) 789-5000
Yucaipa Valley Water District	(909) 797-5117

CALL 1-800-506-2555 to:

- Report clogged storm drains or illegal storm drain disposal from residential, industrial, construction and commercial sites into public streets, storm drains and/or water bodies.
- Find out about our various storm drain pollution prevention materials.
- Locate the dates and times of Household Hazardous Waste (HHW) Collection Events.
- Request adult, neighborhood, or classroom presentations.
- Locate other County environmental services.
- Receive grasscycling information and composting workshop information.

Or visit our
Riverside County Flood Control and Water Conservation District
website at: www.rcflood.org

Other links to additional storm drain pollution information:

- County of Riverside Environmental Health: www.rivcoeh.org
- State Water Resources Control Board: www.waterboards.ca.gov
- California Stormwater Quality Association: www.casqa.org
- United States Environmental Protection Agency (EPA): www.epa.gov/compliance/assistance (compliance assistance information)

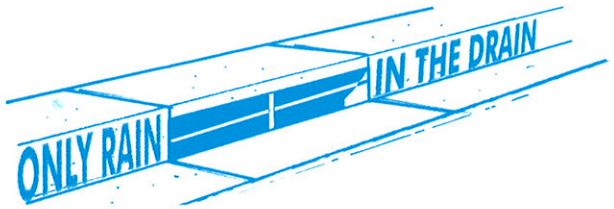
Riverside County's, "Only Rain Down the Storm Drain" Pollution Prevention Program gratefully acknowledges the Bay Area Stormwater Management Agencies Association and the Cleaning Equipment Trade Association for information provided in this brochure.

Guidelines for Maintaining your...



Swimming Pool, Jacuzzi and Garden Fountain

Where does the water go?



Pool, Jacuzzi and Fountain wastewater and rain water runoff (also called stormwater) that reach streets can enter the storm drain and be conveyed directly into local streams, rivers and lakes.



A storm drain's purpose is to prevent flooding by carrying rain water away from developed areas. Storm drains are not connected to sanitary sewers systems and treatment plants!

Wastewater, from residential swimming pools, Jacuzzis, fishponds and fountains, often contains chemicals used for sanitizing or cleansing purposes. Toxic chemicals (such as chlorine or copper-based algaecides) may pollute the environment when discharged into a storm drain system.

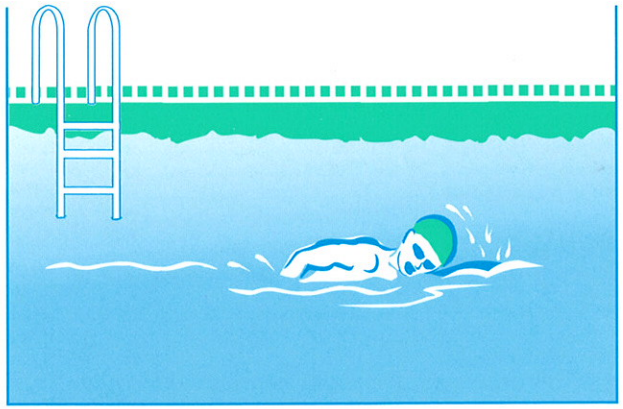
The Cities and County of Riverside have adopted ordinances that prohibit the discharge of wastewater to the street and storm drain system.



Discharge Regulations

Regulatory requirements for discharging wastewater from your pool may differ from city to city. Chlorinated water should not be discharged into the street, storm drain or surface waters. Check with your water agency to see if disposal to the sanitary sewer line is allowed for pool discharges (see reverse for Riverside County sewer agencies).

If allowed, a hose can be run from the pool Jacuzzi, or fountain to the private sewer cleanout, washing machine drain or a sink or bathtub.



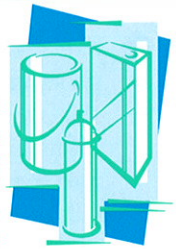
If you cannot discharge to the sewer, you may drain your fountain, pool, or jacuzzi to your landscaping by following these guidelines:

First, reduce or eliminate solids (e.g. debris, leaves or dirt) in the pool water and allow the chemicals in the pool water to dissipate before draining the pool (this could take up to 7 days, verify using a home pool test kit).

Second, slowly drain to a landscaped area away from buildings or structures. Control the flow to prevent soil erosion; it may take more than one day to empty. Do not allow sediment to enter the street, gutter or storm drain.

Maintenance & Chemicals

Cleaning Filters



Filter rinse water and backwash must be discharged to the sanitary sewer, on-site septic tank and drain field system (if properly designed and adequately sized), or a seepage pit. Alternatively, rinse water or backwash may be diverted to landscaped or dirt areas. Filter media and other non-hazardous solids should be picked up and disposed of in the trash.

Algaecides

Avoid using copper-based algaecides unless absolutely necessary. Control algae with chlorine, organic polymers or other alternatives to copper-based pool chemicals. Copper is a heavy metal that can be toxic to aquatic life when you drain your pool.

Chemical Storage and Handling

- Use only the amount indicated on product labels
- Store chlorine and other chemicals in a covered area to prevent runoff. Keep out of reach of children and pets.
- Chlorine kits, available at retail swimming pool equipment and supply stores, should be used to monitor the chlorine and pH levels before draining your pool.
- Chlorine and other pool chemicals should never be allowed to flow into the gutter or storm drain system.

Take unwanted chemicals to a Household Hazardous Waste (HHW) Collection Event. There's no cost for taking HHW items to collection events – it's FREE! Call **1-800-506-2555** for a schedule of HHW events in your community.





Landscaping and garden maintenance activities can be major contributors to water pollution. Soils, yard wastes, over-watering and garden chemicals become part of the urban runoff mix that winds its way through streets, gutters and storm drains before entering lakes, rivers, streams, etc. Urban runoff pollution contaminates water and harms aquatic life!

In Riverside County, report illegal discharges into the storm drain, call
1-800-506-2555
"Only Rain Down the Storm Drain"

Important Links:

Riverside County Household Hazardous Waste Collection Information
1-800-304-2226 or www.rivcowm.org

Riverside County Backyard Composting Program
1-800-366-SAVE

Integrated Pest Management (IPM) Solutions
www.ipm.ucdavis.edu

California Master Gardener Programs
www.mastergardeners.org
www.camastergardeners.ucdavis.edu

California Native Plant Society
www.cnps.org

The Riverside County "Only Rain Down the Storm Drain" Pollution Prevention Program gratefully acknowledges Orange County's Storm Water Program for their contribution to this brochure.

...Only Rain Down ...the Storm Drain

What you should know for... Landscape and Gardening

Best Management tips for:

- Professionals
- Novices
- Landscapers
- Gardeners
- Cultivators



Tips for Landscape & Gardening

This brochure will help you to get the most of your lawn and gardening efforts and keep our waterways clean. Clean waterways provide recreation, establish thriving fish habitats, secure safe sanctuaries for wildlife, and add beauty to our communities. NEVER allow gardening products or waste water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.



- Plant native vegetation to reduce the amount of water, fertilizers and pesticides applied to the landscape.
- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro-spray systems. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.



- Consider recycling your green waste and adding "nature's own fertilizer" to your lawn or garden.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
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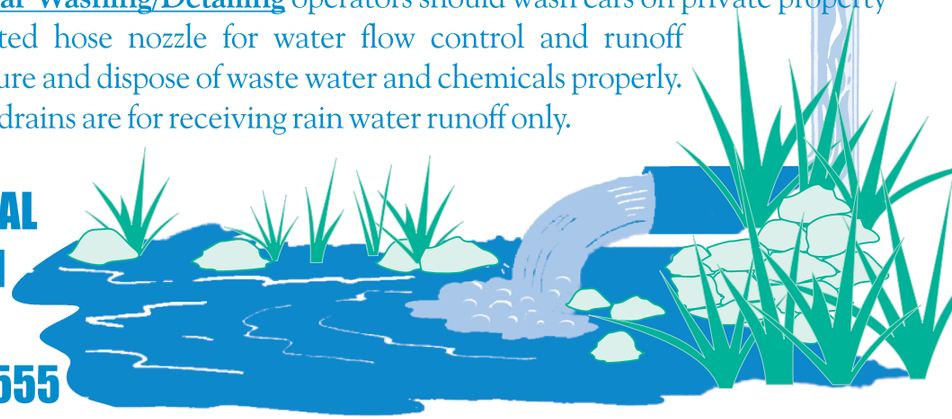

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City of San Jacinto	(951) 654-4041
Coachella Valley Water District	(760) 398-2651
Desert Water Agency (Palm Springs)	(760) 323-4971
Eastern Municipal Water District	(951) 928-3777
Elsinore Valley Municipal Water District	(951) 674 3146
Elsinore Water District	(951) 674-2168
Farm Mutual Water Company	(951) 244-4198
Idyllwild Water District	(951) 659-2143
Indio Water Authority	(760) 391-4129
Jurupa Community Services District	(951) 685-7434
Lee Lake Water	(951) 658-3241
Mission Springs Water	(760) 329-6448
Rancho California Water District	(951) 296-6900
Ripley, CSA #62	(760) 922-4951
Riverside Co. Service Area #51	(760) 227-3203
Rubidoux Community Services District	(951) 684-7580
Valley Sanitary District	(760) 347-2356
Western Municipal Water District	(951) 789-5000
Yucaipa Valley Water District	(909) 797-5117

CALL 1-800-506-2555 to:

- Report clogged storm drains or illegal storm drain disposal from residential, industrial, construction and commercial sites into public streets, storm drains and/or water bodies.
- Find out about our various storm drain pollution prevention materials.
- Locate the dates and times of Household Hazardous Waste (HHW) Collection Events.
- Request adult, neighborhood, or classroom presentations.
- Locate other County environmental services.
- Receive grasscycling information and composting workshop information.

Or visit our
Riverside County Flood Control and Water Conservation District
website at: www.rcflood.org

Other links to additional storm drain pollution information:

- County of Riverside Environmental Health: www.rivcoeh.org
- State Water Resources Control Board: www.waterboards.ca.gov
- California Stormwater Quality Association: www.casqa.org
- United States Environmental Protection Agency (EPA): www.epa.gov/compliance/assistance (compliance assistance information)

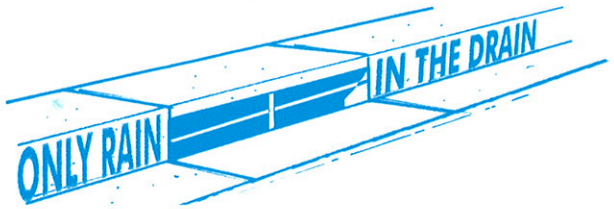
Riverside County's, "Only Rain Down the Storm Drain" Pollution Prevention Program gratefully acknowledges the Bay Area Stormwater Management Agencies Association and the Cleaning Equipment Trade Association for information provided in this brochure.

Guidelines for Maintaining your...



Swimming Pool, Jacuzzi and Garden Fountain

Where does the water go?



Pool, Jacuzzi and Fountain wastewater and rain water runoff (also called stormwater) that reach streets can enter the storm drain and be conveyed directly into local streams, rivers and lakes.



A storm drain's purpose is to prevent flooding by carrying rain water away from developed areas. Storm drains are not connected to sanitary sewers systems and treatment plants!

Wastewater, from residential swimming pools, Jacuzzis, fishponds and fountains, often contains chemicals used for sanitizing or cleansing purposes. Toxic chemicals (such as chlorine or copper-based algaecides) may pollute the environment when discharged into a storm drain system.

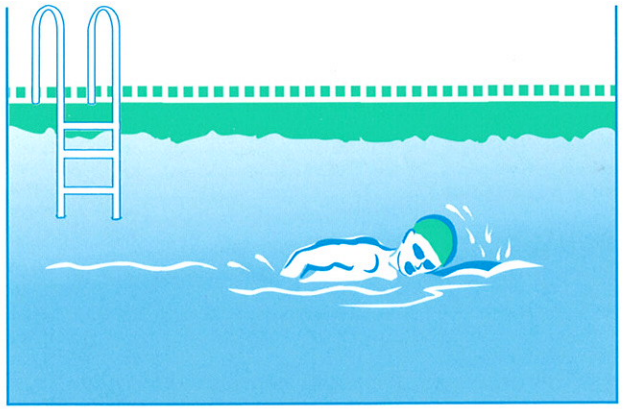
The Cities and County of Riverside have adopted ordinances that prohibit the discharge of wastewater to the street and storm drain system.



Discharge Regulations

Regulatory requirements for discharging wastewater from your pool may differ from city to city. Chlorinated water should not be discharged into the street, storm drain or surface waters. Check with your water agency to see if disposal to the sanitary sewer line is allowed for pool discharges (see reverse for Riverside County sewer agencies).

If allowed, a hose can be run from the pool Jacuzzi, or fountain to the private sewer cleanout, washing machine drain or a sink or bathtub.



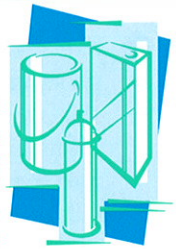
If you cannot discharge to the sewer, you may drain your fountain, pool, or jacuzzi to your landscaping by following these guidelines:

First, reduce or eliminate solids (e.g. debris, leaves or dirt) in the pool water and allow the chemicals in the pool water to dissipate before draining the pool (this could take up to 7 days, verify using a home pool test kit).

Second, slowly drain to a landscaped area away from buildings or structures. Control the flow to prevent soil erosion; it may take more than one day to empty. Do not allow sediment to enter the street, gutter or storm drain.

Maintenance & Chemicals

Cleaning Filters



Filter rinse water and backwash must be discharged to the sanitary sewer, on-site septic tank and drain field system (if properly designed and adequately sized), or a seepage pit. Alternatively, rinse water or backwash may be diverted to landscaped or dirt areas. Filter media and other non-hazardous solids should be picked up and disposed of in the trash.

Algaecides

Avoid using copper-based algaecides unless absolutely necessary. Control algae with chlorine, organic polymers or other alternatives to copper-based pool chemicals. Copper is a heavy metal that can be toxic to aquatic life when you drain your pool.

Chemical Storage and Handling

- Use only the amount indicated on product labels
- Store chlorine and other chemicals in a covered area to prevent runoff. Keep out of reach of children and pets.
- Chlorine kits, available at retail swimming pool equipment and supply stores, should be used to monitor the chlorine and pH levels before draining your pool.
- Chlorine and other pool chemicals should never be allowed to flow into the gutter or storm drain system.

Take unwanted chemicals to a Household Hazardous Waste (HHW) Collection Event. There's no cost for taking HHW items to collection events – it's FREE! Call **1-800-506-2555** for a schedule of HHW events in your community.

