Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING

PROJECT SPECIFIC PRELIMINARY WATER QUALITY MANAGEMENT PLAN (P-WQMP)

FOR:
RIDER AND PATTERSON BUSINESS CENTER
SWC OF RIDER STREET AND PATTERSON AVENUE
COUNTY OF RIVERSIDE, CALIFORNIA 92570
APNs: 317-210-006, -008, -010, -011 AND -018

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NOVEMBER 6, 2022

JOB NO. 3958

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FOR

"RIDER AND PATTERSON BUSINESS CENTER"

PREPARED BY VICKY LI
UNDER THE SUPERVISION OF:

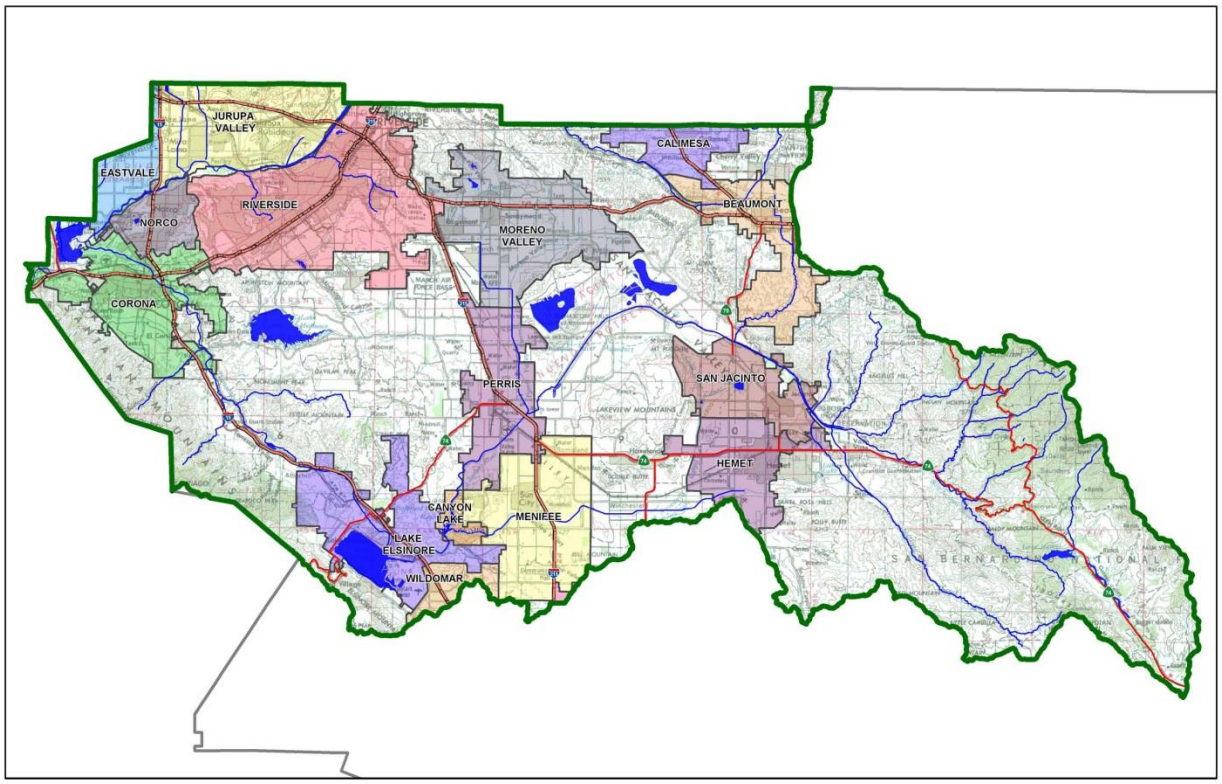
11/6/22

REINHARD STENZEL — DATE
R.C.E. 56155
EXP. 12/31/2022

Project Specific Water Quality Management Plan

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

Project Title: Rider and Patterson Business Center
Development No: A.P.N. 317-210-006, -008, -010, -011 and -018
Design Review/Case No: PPT220004/BGRXXXXXXX



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☒ **Preliminary**
☐ **Final**

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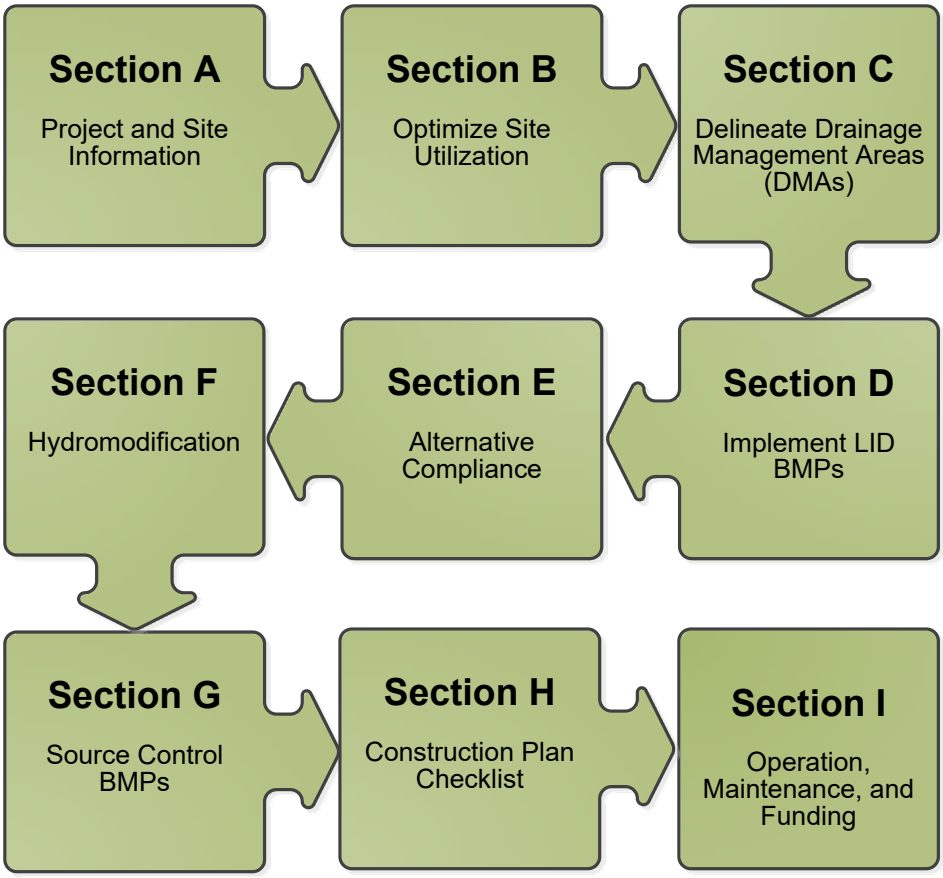
Prepared for Compliance with
Regional Board Order No. **R8-2010-0033**

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 **Western Realco** by **Thienes Engineering, Inc.** for the **Rider and Patterson Business Center** project.

This WQMP is intended to comply with the requirements of **County of Riverside** for **Ordinance No. 754** 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 **County of Riverside** Ordinance **No. 754**.

"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	Date
Jeremy Mape	Director of Acquisitions
Owner's Printed Name	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	Date
Reinhard Stenzel	Director of Engineering
Preparer's Printed Name	Preparer's Title/Position

Preparer's Licensure:

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Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	Light Industrial Warehouse
Planning Area:	Light Industrial/Business Park
Community Name:	N/A
Development Name:	Rider and Patterson Business Center
PROJECT LOCATION	
Latitude & Longitude (GIS): 33.828344, -117.254767	
Project Watershed and Sub-Watershed: Santa Ana River & San Jacinto	
APN(s): 317-210-006, -008, -010, -011 and -018	
Map Book and Page No.: BK317 PG.21	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	Light Industrial
Proposed or Potential SIC Code(s)	4225
Area of Existing Impervious Project Footprint (SF)	0
Total Area of proposed Impervious Surfaces within the Project Limits (SF)/or Replacement	1,780,297 (31.52 acres) total site 1,140,836 (26.19 acres) impervious
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 (SF)	13,330
Is the project located within any MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	N/A
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)	Soil/Infiltration Report Available
What is the Water Quality Design Storm Depth for the project?	0.585

Project Description:

The project site encompasses approximately 40.87 acres where 31.52 acres are onsite improvements and the remaining 9.35 acres are offsite improvements along Rider Street, Patterson Avenue and Walnut Street. Proposed improvements to the site includes a commercial type building of approximately 583,903 square feet. There will be truck yards south and north of the building. Vehicle parking lots will be along the east side of the building and at the southwest corner of the site. Landscaping will be adjacent to the streets and scattered throughout the site. Per the soils engineer, infiltration rates throughout the site resulted below 1.6 inches per hour except for the southerly truck yard area where the recommended infiltration rate resulted in 6.1 inches per hour. Consequently, a bioretention basin (BIO “A”) and an underground infiltration system (CMP “B”) will be proposed to treat the runoff produced by the 85th percentile storm rainfall depth. Street runoff – including DMAs D and E which consist of steep-sloped onsite landscaped areas sheet flowing offsite due to the difference in elevation between the project site and Patterson Avenue – will be mitigated by over mitigation of the onsite runoff (actual street runoff will not be conveyed onsite). The Vbmp produced by the street’s impervious disturbance (including DMAs D and E) will be provided in BIO “A". All proposed underground detention systems will be utilized to mitigate the 100-year flowrate; however, CMP “B” particularly will also be used in combination for infiltration of the 85th percentile since infiltration rates permit this. A full trash capture connector pipe screen located within the bioretention basin’s outlet structure will be utilized as pretreatment. Other forms of pretreatment will consist of hydrodynamic separators prior to flows entering BIO “A” and drain inserts prior to flows entering CMP “B”.

Due to the Santa Ana Watershed LID Manual’s maximum 10 acre tributary limitations for bioretention facilities, BIO “A” will be sized using Section 3.7 of the Santa Margarita Watershed LID Manual for Large Bioretention/Biofiltration BMP Facilities. This excerpt is included in Attachment 10 of this WQMP report for

reference. The following Large Biofiltration (no infiltration/limited infiltration) design guidelines were incorporated to BIO "A":

- Cross Section Geometry
    - Ponding depth above the engineered soil media is 0.5 feet of the 3 feet allowed.
    - The engineered media is 3 feet deep compared to the 2 feet minimum.
    - Side slopes conform to Basin Guidelines within the LID Manual.
- Pretreatment
    - All tributary areas to BIO "A" are stabilized via impervious surfaces or vegetated accordingly.
    - A manufactured pre-treatment GULD certified device is proposed for every inlet into the BIO "A". The manufactured device is Contech's CDS units, individually sized for their respective tributaries (see sizing in Appendix 6).
- Overflow structure designed per Appendix C's Basin Guidelines.
- Underdrain
    - Subdrains are designed with positive drainage of at least 0.5%.
    - The overflow structure is 0.5' above the mulch layer and sized to drain the site's runoff that is greater than the Vbmp produced by DMA A. Therefore, the underdrains are only designed for the standard Vbmp from DMA A.
    - Observation wells/cleanouts, of equal size to the 6" underdrain, are provided every 50 feet or more frequently. They will extend 6" above the mulch with lockable screw cap.
    - All underdrain piping terminates with an observation well/cleanout.
- Energy Dissipation
    - Riprap is provided at all inlets entering the large biofiltration and velocities will be reduced to no more than 2 fps.
    - No vegetation will be planted in the inlet's flow path.
- Side slope erosion control will consist of irrigated vegetation.
- Flows are distributed through multiple inlets.

Additionally, per the soils report, the depth to bedrock (impermeable layer) increases to the east of the southerly underground infiltration system; therefore, from a depth to bedrock standpoint, infiltration is feasible at the location of the infiltration system.

Existing Site:
Under existing condition, offsite runoff enter the project site at several locations. The largest tributary area is from offsite areas located south of Walnut Street. There is an existing low point at Walnut Street near the southwest corner of the project site where these flows enter the site.

Additional offsite areas enter the project site from three existing streets to the west. From south to north, the three streets are Sunny Canyon Street, Wildwood Lane and Norrisgrove Drive. Here, the streets simply end near the westerly property line where runoff continues to sheet flow into the project site.

The site is currently a vacant dirt lot with sparse natural grasses and vegetation. Runoff from the project site generally drains to the northeasterly corner of the site via natural drainage courses. As mentioned above, the project site accepts offsite runoff.

Hydrology:
Proposed conditions will continue to convey offsite tributary flows. However, with the proposed improvements, offsite flows will be intercepted by catch basins at the respective streets and then conveyed northerly through a separate storm drain to the proposed extension of the Rider Street storm drain system. Collecting these flows separately in a proposed offsite storm drain will ensure that offsite flows will not comingle with onsite runoff. The proposed offsite storm drain will collect runoff from Walnut Street, Sunny Canyon Street, Wildwood Lane, and Norrisgrove Drive, then continue northerly to Rider Street.

For onsite runoffs, the south half of the proposed building and the southerly truck yard, plus a portion of the westerly offsite berm between the site and the residential neighborhood further west (DMA B) will drain to catch basins in the truck yard. Runoffs from these areas will then be conveyed to a proposed underground infiltration system (CMP "B") within the truck yard, for treatment of the Vbmp and in order to reduce proposed condition runoffs to existing condition discharge from the site. Discharge from the underground infiltration system will be conveyed northerly via a proposed private storm drain to BIO "A", then further north via a proposed lateral to the extended Rider Street storm drain.

The easterly parking lot (DMA A) will drain to catch basins in the parking lot. Runoffs will then be conveyed to a proposed underground detention system within the parking lot strictly for underground detention. Discharge from the underground detention system, plus an entry driveway fronting Patterson Avenue, will be conveyed northerly to BIO "A" for treatment of the Vbmp, then further north to the extended Rider Street storm drain.

The north half of the proposed building and the northerly truck yard, plus a portion of the westerly offsite berm between the site and the residential neighborhood further west (DMA A) will drain to catch basins in the truck yard. Runoffs from these areas will then be conveyed to a proposed underground detention system within the truck yard strictly for underground detention. Discharge from the underground detention system will be conveyed easterly via another proposed private storm drain to BIO "A" for treatment of the Vbmp, then further north to the extended Rider Street storm drain.

The northerly drive aisle (north of the site's northerly truck yard) and the northerly frontage landscape, plus a smaller portion of the westerly offsite berm (DMA A) will drain to catch basins in the drive aisle and frontage landscape, respectively. Runoffs will then be conveyed easterly via another proposed private storm drain to BIO "A" for treatment of the Vbmp and then, similarly, further north to the extended Rider Street storm drain.

The easterly proposed entry driveway (DMA A) will surface drain into a proposed trench drain located in the entry driveway. Runoff will then be conveyed westerly via another proposed private storm drain to BIO "A" for treatment of the Vbmp, then further north to the extended Rider Street storm drain.

The proposed southerly landscape fronting Walnut Street (DMA C) will surface drain to Walnut Street. These landscaped areas are considered self-treating.

A full trash capture connector pipe screen located within the bioretention basin's outlet structure will be utilized as pretreatment. Additionally, all proposed public catch basins will be equipped with full trash capture connector pipe screens.

Other forms of pretreatment will consist of hydrodynamic separators prior to flows entering BIO "A" and drain inserts prior to flows entering CMP "B".

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

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, and 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
Perris Valley Storm Drain	None	N/A	Not classified as a RARE waterbody.
San Jacinto River, Reach 3	None	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Canyon Lake (aka San Jacinto River, Reach 2)	Nutrients	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
San Jacinto River, Reach 1	None	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Lake Elsinore	DDT (Dichlorodiphenyltrichloroethane), Nutrients, Organic Enrichment/Low Dissolved Oxygen, PCBs (Polychlorinated biphenyls), Toxicity	MUN, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Temescal Creek, Reach 6	None	MUN, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Temescal Creek, Reach 5	None	MUN, AGR, GWR, REC1, REC2, WARM, WILD, RARE	21 miles
Temescal Creek, Reach 4	None	MUN, AGR, GWR, REC1, REC2, WARM, WILD, RARE	27 miles
Temescal Creek, Reach 3 (aka Lee Lake)	None	MUN, AGR, IND, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Temescal Creek, Reach 2	None	MUN, AGR, IND, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Temescal Creek, Reach 1	None	MUN, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Santa Ana River, Reach 3	Copper, Indicator Bacteria, Lead	MUN, AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN	44 miles
The Prado Basin Management Zone	pH	MUN, REC1, REC2, WARM, WILD, RARE	44 miles
Santa Ana River, Reach 2	None	MUN, AGR, GWR, REC1, REC2, WARM, WILD, RARE	49 miles
Santa Ana River, Reach 1	None	MUN, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Tidal Prism of Santa Ana River and Newport Slough	Indicator Bacteria	MUN, REC1, REC2, COMM, WILD, RARE, MAR	75 miles

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
Pacific Ocean Near shore Zone	None	MUN, IND, NAV, REC1, REC2, COMM, WILD, RARE, SPWN, MAR, SHEL	75 miles
Pacific Ocean Offshore Zone	None	MUN, IND, NAV, REC1, REC2, COMM, WILD, RARE, SPWN, MAR	76 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)* County of Riverside Grading Permit	☒ Y	☐ N
Other *(please list in the space below as required)* County of Riverside Building Permit	☒ 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.

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?

- *There are no creeks, wetlands, or riparian habitats nearby.*
- *The site is currently a vacant dirt lot with sparse natural grasses and vegetation. Runoff from the project site generally drains to the northeasterly corner of the site via natural drainage courses.*

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

- *Not applicable, the entire site was previously disturbed (mass-graded).*
- *Not applicable, there are no sensitive areas.*
- *No applicable, there are no existing trees or vegetation to preserve.*

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

- *Per the soils engineer, infiltration rates throughout the site resulted below 1.6 inches per hour except for the southerly truck yard area where the recommended infiltration rate resulted in 6.1 inches per hour. Consequently, a bioretention basin (BIO "A") and an underground infiltration system (CMP "B") will be proposed to treat the runoff produced by the 85th percentile storm rainfall depth.*

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

- *Impervious area on the site has been minimized to County planning requirements.*

- *Due to the nature of the project site (large heavy trucks), substitution of pavement for pervious material is not feasible. The project does not propose overflow parking where substitution of pavement for landscaping would be optimal. Landscaping has been provided to meet County planning requirements.*
- *The entire Design Capture Volume (DCV) is handled by the proposed BIO "A" and CMP "B". Street runoff (including DMAs D and E) will be mitigated via oversizing the onsite mitigation, even though street runoff does not physically drain there. Permeable pavement is not needed to meet the DCV.*

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

- *Impervious areas were not dispersed into pervious areas but are directed to the proposed BIO "A" and CMP "B".*

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]	Area (Sq. Ft.)	Area (Acres)	DMA Type
A-1	Roofs/Conc/Asphalt	652,529	14.98	Type D
A-2	Ornamental Landscaping	180,338	4.14	Type D
B-1	Roofs/Conc/Asphalt	488,308	11.21	Type D
B-2	Ornamental Landscaping	16,988	0.39	Type D
C	Ornamental Landscaping	17,860	0.41	Type A
D	Ornamental Landscaping	3,920	0.09	Type D
E	Ornamental Landscaping	13,068	0.30	Type D
F	Ornamental Landscaping	65,776	1.51	Type D
G	Ornamental Landscaping	57,499	1.32	Type D
ST	Concrete or Asphalt	284,011	6.52	Type D

[1]*Reference Table 2-1 in the WQMP Guidance Document to populate this column.*

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

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
C	17,860	Drought Tolerant	Timed Sprinklers

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

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

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

DMA					Receiving Self-Retaining DMA		
DMA Type/ID	Area (square feet)	Post-Project Surface Type	Impervious Fraction	Product	DMA Type/ID	Area (square feet)	Ratio
	[A]		[B]	[C] = [A] x [B]		[D]	[C] / [D]

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

DMA Name or ID	BMP Name or ID
A-1	Bioretention Basin (BIO "A")
A-2	Bioretention Basin (BIO "A")
D	Bioretention Basin (BIO "A")
E	Bioretention Basin (BIO "A")
G	Bioretention Basin (BIO "A")
ST	Bioretention Basin (BIO "A")
B-1	Underground Infiltration System (CMP "B")
B-2	Underground Infiltration System (CMP "B")
F	Underground Infiltration System (CMP "B")

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. 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: Per the soils engineer, infiltration rates in **DMA A** resulted below 1.6 inches per hour; therefore, a bioretention basin (BIO "A") will be proposed to treat the runoff produced by the 85th percentile storm rainfall depth.		
…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:		

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.

☒ None of the above.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If neither 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: 5.33

Type of Landscaping (Conservation Design or Active Turf): Conservation Design

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: 26.19

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: 0.79

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: 20.7

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)
20.7	5.33

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: 365

Project Type: Industrial

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: 26.19

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: 172

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: 4,505

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)
4,505	365

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: N/A

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: N/A

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

Enter the factor from Table 2-3: N/A

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

Minimum required use: N/A

Step 5: Determine if harvesting stormwater runoff for other non-potable 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 non-potable use (Step 4)	**Projected average daily use (Step 1)**
N/A	N/A

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, unless a site-specific analysis has been completed that demonstrates technical infeasibility as noted in D.3 below.

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.

☐ Not applicable

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				Alternative Compliance	Site Design (Type A, B, C)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment		
A-1	☐	☐	☒	☐	☐	☐
A-2	☐	☐	☒	☐	☐	☐
B-1	☒	☐	☐	☐	☐	☐
B-2	☒	☐	☐	☐	☐	☐
C	☐	☐	☐	☐	☐	☒
D	☐	☐	☒	☐	☐	☐
E	☐	☐	☒	☐	☐	☐
F	☒	☐	☐	☐	☐	☐
G	☐	☐	☒	☐	☐	☐
ST	☐	☐	☒	☐	☐	☐

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

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 A)

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious 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)*
	[A]		[B]	[C]	[A] x [C]			
A-1	652,529	Roofs/Conc/Asphalt	*1.00*	*0.89*	*582,055.7*	*0.585*	*28375.2*	*55,675.0*
A-2	180,338	Ornamental Landscaping	*0.10*	*0.11*	*19,919.8*	*0.585*	*971.1*	
D	3,920	Ornamental Landscaping	*0.10*	*0.11*	*433.0*	*0.585*	*21.1*	
E	13,068	Ornamental Landscaping	*0.10*	*0.11*	*1,443.5*	*0.585*	*70.4*	
G	57,499	Ornamental Landscaping	*0.10*	*0.11*	*6,351.2*	*0.585*	*309.6*	
ST	284,011	Concrete or Asphalt	*1.00*	*0.89*	*253,338.0*	*0.585*	*12350.2*	
	1,191,366				*863,541*	0.585	42,097.6	55,675

Table D.4 DCV Calculations for LID BMPs (DMA B)

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious 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)*
	[A]		[B]	[C]	[A] x [C]			
B-1	488,308	Roofs/Conc/Asphalt	*1.00*	*0.89*	*435,570.4*	*0.585*	*21234.1*	*22,310.0*
B-2	16,988	Ornamental Landscaping	*0.10*	*0.11*	*1,876.5*	*0.585*	*91.5*	
F	65,776	Ornamental Landscaping	*0.10*	*0.11*	*7,265.4*	*0.585*	*354.2*	
	571,072				*444,712*	0.585	21,679.8	22,310

[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 ft²)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft²)	P	N	P	P	N	P	P	P
☒ Parking Lots (>5,000 ft²)	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 Imp Fraction, I_f	DMA Runoff Factor	DMA Area x Runoff Factor				
	[A]		[B]	[C]	[A] x [C]				
N/A	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*Design Storm Depth (in)*	*Minimum Design Capture Volume (cubic feet)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*

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

[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 (min)	n/a	n/a	n/a
Volume (cubic-feet)	n/a	n/a	n/a

[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 Sensitivity 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:

The project site is located within the exempted HCOC area, as presented in the April 20, 2017 approved WAP/HCOC document attached in Appendix 7.

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.

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
A. On-site storm drain inlets	• Mark all inlets with the words "Only Rain Down the Storm Drain" or similar.	• Maintain and periodically repaint or replace inlet markings annually. • Provide stormwater pollution prevention information to new site owners, lessees, or operators upon occupancy and annually thereafter. • See CASQA fact sheet SC-44 for "Drainage System Maintenance," included in Appendix of this document. • Include the following lease agreements: "Tenant shall not allow anyone to discharge anything to storm drain or to store or deposit materials so as to create a potential discharge to storm drains."

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
B. Interior floor drains and elevator shaft sump pumps	• Interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.	• Inspect and maintain drains semi-annually to prevent blockages and overflow.
D2. Landscape / Outdoor Pesticide Use	• Landscape plans will 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. • Pest-resistant plans will be used adjacent to hardscape. • The landscape plans will consider plants appropriate to the site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	• Maintain landscaping only using minimum pesticides, when needed. • See Appendix 10 for "Landscape and Gardening" brochure by RCFlood. • Provide Integrated Pest Management (IPM) information to new owners, lessees and operators upon occupancy and annually thereafter. IPM is an effective and environmentally sensitive approach to pest management.
G. Refuse Areas	• Site refuse will be handled by contractor on a weekly basis. • Signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.	• A minimum of two receptacles will be provided and located indoors. Receptacles are to be inspected daily and repairs or replacements to leaky receptacles will be completed immediately. Receptacles are to remain covered when not in use. Dumping of liquid or hazardous wastes is prohibited. A "no hazardous materials" sign will be posted. Spills will be cleaned immediately upon discovery. Spill control materials will be available onsite. See Appendix 10 for CASQA fact sheet SC-34 for "Waste Handling and Disposal."
H. Industrial processes	• All process activities to be performed indoors. No processes to drain to exterior or to storm drain system.	• See Appendix 10 for CASQA fact sheet SC-10 for "Non-Stormwater Discharges"
M. Loading Docks	• Spills will be cleaned up immediately and disposed of properly.	• Move loaded and unloaded items indoors as soon as possible. • See Appendix 10 for CASQA fact sheet SC-30 for "Outdoor Loading and Unloading"
P. Plazas, sidewalks, and parking lots		• 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 washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

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)	Latitude	Longitude
A	On-site storm drain inlets	Conceptual Grading Plans	---	---
B	Interior floor drains and elevator shaft sump pumps	N/A	---	---
D2	Landscape / Outdoor Pesticide Use	On-site Landscape Improvement Plans	---	---
G	Refuse Areas	Conceptual Grading Plans	---	---
H	Industrial processes	Conceptual Grading Plans (indoors, if any)	---	---
M	Loading Docks	Conceptual Grading Plans	---	---
P	Plazas, sidewalks, and parking lots	Conceptual Grading Plans	---	---
BIO "A"	Bioretention Basin	Conceptual Grading Plans	33.829692	-117.253573
CMP "B"	Underground Infiltration System	Conceptual Grading Plans	33.827078	-117.254682

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: County of Riverside: Covenant and Agreement

Maintenance will be funded by the owner. Owner is responsible for BMP maintenance per the recorded County of Riverside Covenant and Agreement. A recorded copy should be kept within Appendix 3 of Appendix 9's Operation and Maintenance Plan, within this WQMP report.

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

Last Update:12/8/21
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Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

VICINITY MAP

FOR

RIDER AND PATTERSON BUSINESS CENTER

Last Update:12/6/21
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FLOW

RECEIVING WATERS MAP

FOR

RIDER AND PATTERSON BUSINESS CENTER

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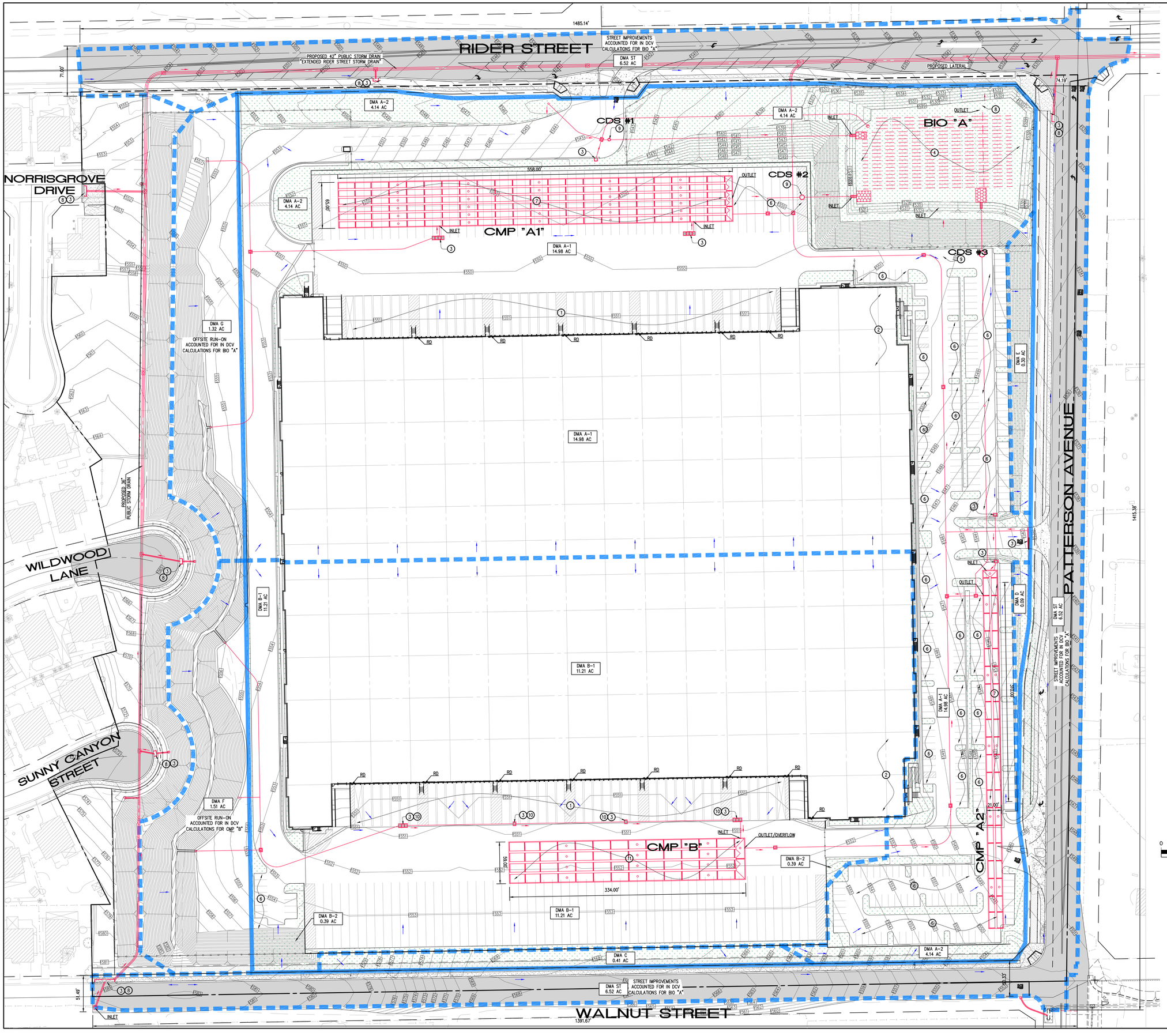
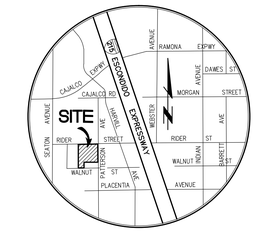
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173





VICINITY MAP

NOT TO SCALE

LEGEND

1. LOADING/UNLOADING TRUCK DOCKS
2. EDUCATIONAL MATERIAL/OFFICE
3. STORM DRAIN STENCIL
4. BIORETENTION
5. TRASH COMPACTOR
6. PARKING LOT MAINTENANCE (SWEEPING)
7. UNDERGROUND DETENTION FOR 100-YR STORM
8. FULL TRASH CAPTURE – CONNECTOR PIPE SCREEN
9. HYDRODYNAMIC SEPARATOR
10. DRAIN INSERT(S)
11. UNDERGROUND INFILTRATION/DETENTION FOR 100-YR STORM

NOTE:

- BOUNDARY
- SUBAREAS
- FLOW LINE
- SD FLOW LINE
- LANDSCAPE/EFFICIENT IRRIGATION
- STREET IMPROVEMENTS LIMITS
- RD ROOF DRAIN

NO OUTDOOR MATERIAL STORAGE
NO VEHICLE OR EQUIPMENT FUELING ONSITE
NO VEHICLE OR EQUIPMENT MAINTENANCE ONSITE

SAMPLE STORM DRAIN STENCIL

DMA Name or ID	Surface Type(s)[1]	Area (Sq. Ft.)	Area (Acres)	DMA Type
A-1	Roofs/Conc/Asphalt	652,529	14.98	Type D
A-2	Ornamental Landscaping	180,338	4.14	Type D
B-1	Roofs/Conc/Asphalt	488,308	11.21	Type D
B-2	Ornamental Landscaping	16,988	0.39	Type D
C	Ornamental Landscaping	17,860	0.41	Type A
D	Ornamental Landscaping	3,920	0.09	Type D
E	Ornamental Landscaping	13,068	0.30	Type D
F	Ornamental Landscaping	65,776	1.51	Type D
G	Ornamental Landscaping	57,499	1.32	Type D
ST	Concrete or Asphalt	284,011	6.52	Type D

0 25 50 100 150

SCALE: 1"=50'

Last Update:11/8/22
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PREPARED FOR:

WESTERN REALCO
500 NEWPORT CENTER DRIVE, SUITE 630
NEWPORT BEACH, CA 92660
PHONE: (949) 720-3787

PREPARED BY:

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
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COUNTY OF RIVERSIDE

PUBLIC WORKS DEPARTMENT

WQMP SITE MAP

RIDER AND PATTERSON BUSINESS CENTER

SWC OF RIDER ST AND PATTERSON AVE

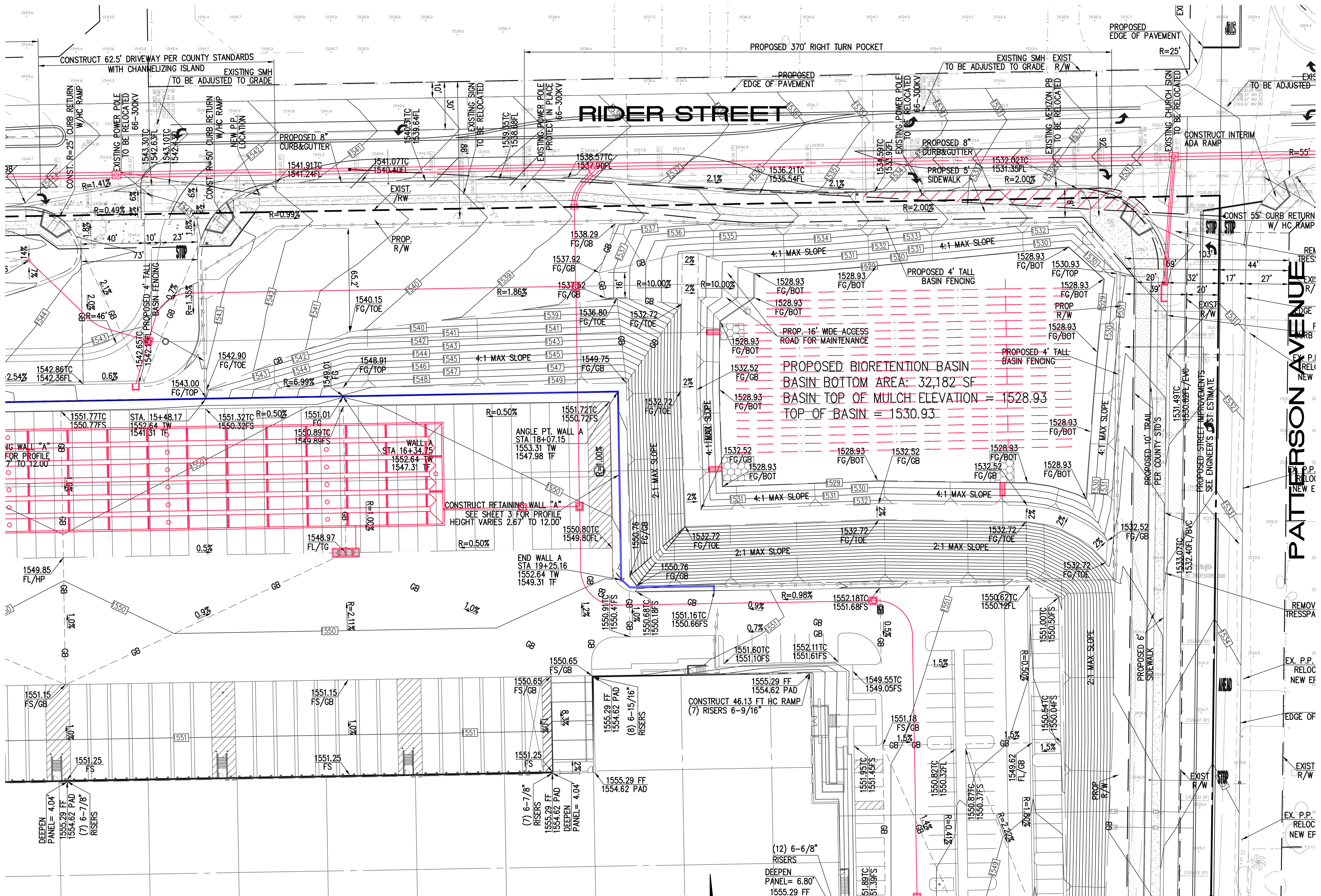
Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

Approved by _____ Date _____

Public Works Director _____ R.C.E. _____

Sheet 1 of 3 Sheets

3958/ 1 OF 3 SHEETS

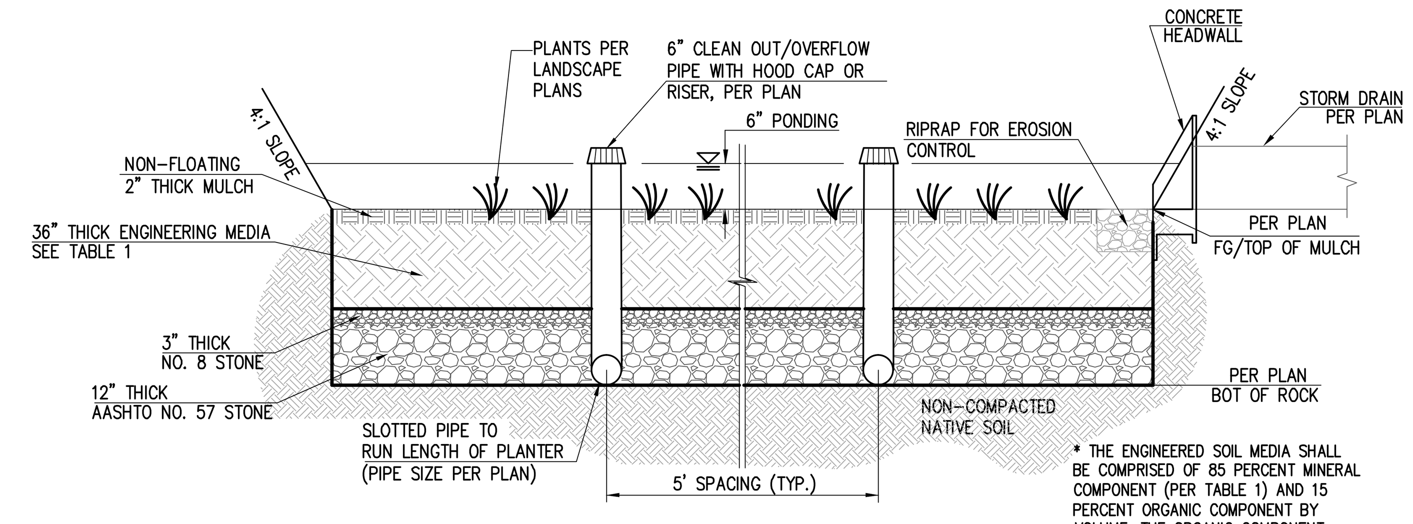


BIORETENTION BASIN

SCALE: 1"=40'

LEGEND

RETAINING WALL



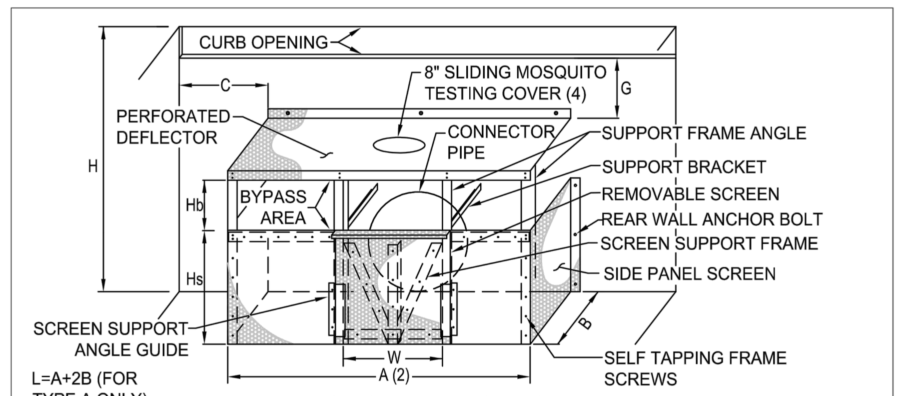
BIORETENTION DETAIL

WITH CLEAN-WASHED ROCK AND SAND

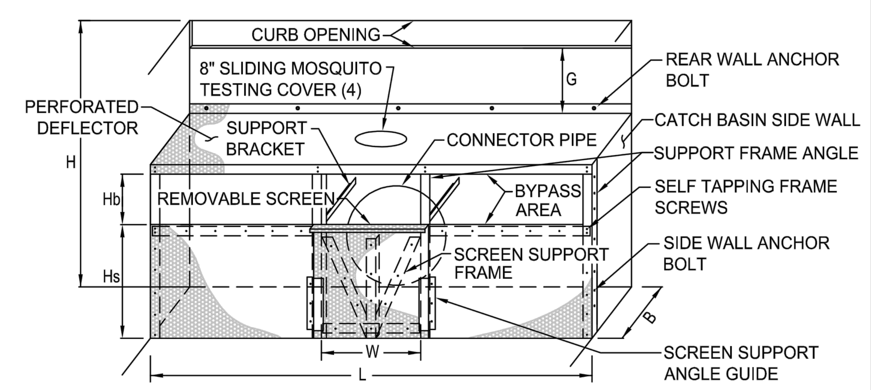
* THE ENGINEERED SOIL MEDIA SHALL BE COMPRISED OF 85 PERCENT MINERAL COMPONENT (PER TABLE 1) AND 15 PERCENT ORGANIC COMPONENT BY VOLUME. THE ORGANIC COMPONENT SHALL BE NITROGEN STABILIZED COMPOST.

TABLE 1: MINERAL COMPONENT RANGE REQUIREMENTS (BY VOLUME)

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



TYPE A (BACK WALL MOUNT)



TYPE B (SIDE WALL MOUNT)

DIMENSIONS:

SCREEN LENGTH (1)	L
REMOVABLE SCREEN WIDTH (2)	W (24" TO 36")
SCREEN HEIGHT (1)	Hs
SCREEN BYPASS HEIGHT (1)	Hb
MINIMUM WALL CLEARANCE (2)	C=12"
MINIMUM INTERIOR SPACE (2)	B=10"
DISTANCE BELOW GUTTER FL (1)	G
CATCH BASIN HEIGHT (5)	H

NOTES:

(1) SEE TABLES ON PAGES 10-13 FOR VALUES
(2) SEE FTCD GENERAL NOTES ON STD 313-3
(3) SEE FTCD SCREEN TYPE AND LOCATIONS WITHIN CATCH BASINS ON STD 313-4 TO -8
(4) MOSQUITO TESTING COVER REQUIRED ONLY FOR STD NOS. 301 AND 302 APPLICATIONS
(5) CB HEIGHT IS VERTICAL DISTANCE FROM TOP OF CURB TO OUTLET PIPE FLOW LINE

Preliminary 02/25/2021 6:55:31 AM

APPROVED BY: DIRECTOR OF TRANSPORTATION, PATRICIA ROMO, RCE 56064 — DATE

COUNTY OF RIVERSIDE — FULL TRASH CAPTURE DEVICE (FTCD) - CONNECTOR PIPE SCREEN (CPS) — STANDARD NO. 313 (1 of 14)

FCTD SPECIFICATIONS

1. FULL TRASH CAPTURE DEVICE (FTCD) SHALL BE A UNITED STORM WATER, INC. CONNECTOR PIPE SCREEN (CPS) OR EQUIVALENT. EQUIVALENT SYSTEMS OR ALTERNATIVE DESIGNS SHALL BE ON THE STATE OF CALIFORNIA APPROVED TRASH CAPTURE DEVICE LIST AND REQUIRE APPROVAL OF THE TRANSPORTATION DEPARTMENT.
2. FTCD SHALL HAVE STRUCTURAL FRAME FOR STIFFNESS AND TO ENABLE BOLTING TO CATCH BASIN FLOOR AND WALL. FRAME MEMBERS SHALL BE FABRICATED FROM PERFORATED 14 GAUGE GRADE 304 STAINLESS STEEL HAVING 5 MM DIAMETER HOLES.
3. FTCD SCREENS SHALL BE FABRICATED FROM PERFORATED 14 GAUGE GRADE 304 STAINLESS STEEL HAVING 5 mm DIAMETER HOLES.
4. FTCD SHALL HAVE A PERFORATED DEFLECTOR SCREEN COVERING THE TOP OF THE FTCD TO PROHIBIT DEBRIS FROM FALLING BEHIND THE FRONT AND SIDE SCREENS. THE DEFLECTOR SHALL BE ABLE TO WITHSTAND A VERTICAL LOAD OF 10 LBS PER SQUARE FOOT
5. FTCD FRAME AND SCREEN SHALL HAVE SUFFICIENT STRUCTURAL INTEGRITY TO WITHSTAND THE FORCE OF STANDING WATER IN THE CATCH BASIN ASSUMING THE SCREEN IS 100% CLOGGED.
6. FCTD SHALL BE FASTENED TO THE CATCH BASIN WALLS AND FLOOR WITH ANCHOR BOLTS. ANCHOR BOLTS SHALL BE SS-304, 3/8" DIAMETER AND 3" LENGTH, AND SHALL BE EPOXY SET INTO CATCH BASIN CONCRETE. IF REINFORCEMENT STEEL IS ENCOUNTERED DURING INSTALLATION, RELOCATE THE ANCHOR HOLE AND FILL VACANT HOLE WITH EPOXY. EPOXY SHALL BE ON THE CURRENT APPROVED LIST OF CHEMICAL ADHESIVES FOR USE IN CALTRANS CONTRACTS. ANCHOR BOLT SPACING TO BE 12" O.C. EXCEPT WHERE FRAME LENGTH WOULD RESULT IN LESS THAN 3 BOLTS PER FRAME MEMBER. IN THIS CASE FASTEN FRAME TO CATCH BASIN WALL USING 3 ANCHOR BOLTS.
7. THE SCREEN SHALL BE SECURED TO THE SUPPORT FRAME, BRACKETS AND SIDE PANEL USING #12 X 0.5" SELF TAPPING SS-304 TECH SCREWS .
8. THE FTCD SHALL BE FABRICATED ON SITE TO BE FLUSH WITH THE INTERIOR SURFACES OF THE CATCH BASIN. THE MAXIMUM ALLOWABLE GAP BETWEEN THE FTCD AND THE CATCH BASIN SURFACES IS 5MM (0.197 INCHES).
9. FOR SCREEN SPANS (DIMENSION "A" FOR TYPE A OR DIMENSION "L" FOR TYPE B PER STD. 313-1) GREATER THAN 36" PROVIDE ADDITIONAL SUPPORT BRACKETS AND SUPPORT FRAME ANGLES AT 36" ON CENTER OR LESS. SEE STD. 313-1 TYPE B FOR TYPICAL SUPPORT BRACKET AND SUPPORT FRAME ANGLE CONFIGURATION.

Preliminary 02/25/2021 6:56:05 AM

APPROVED BY: DIRECTOR OF TRANSPORTATION, PATRICIA ROMO, RCE 56064 — DATE

COUNTY OF RIVERSIDE — FTCD - CPS SPECIFICATIONS — STANDARD NO. 313 (2 of 14)

FTCD GENTERAL NOTES (NEW CONSTRUCTION)

1. FTCD SHALL CONFORM TO THE CONFIGURATIONS SHOWN IN STD. 313-4 THROUGH 313-8 AND SHALL BE SIZED ACCORDING TO THE SIZING TABLES SHOWN IN STD. 313-10 THROUGH 313-13.
2. THE REMOVABLE SCREEN WIDTH (W) SHALL EQUAL THE CONNECTOR PIPE DIAMETER OR 24", WHICHEVER IS GREATER, BUT SHALL NOT EXCEED 36". WHERE DIMENSION "A" PER STD. 313-1 TYPE A (BACK WALL MOUNT) IS LESS THAN OR EQUAL TO 36", THE REMOVABLE SCREEN MAY EXTEND THE FULL WIDTH OF THE FTCD (W = A). IN THIS CASE SUPPORT BRACKETS AND THE ASSOCIATED SUPPORT FRAME ANGLES WILL BE OMITTED.
3. IF THE FTCD CANNOT PROVIDE A SIDE WALL CLEARANCE (C) OF 12", PROVIDE A SIDE WALL MOUNT. AN L-SHAPED FTCD WILL HAVE ONE SIDE WALL AND ONE BACK WALL MOUNT.
4. THE INTERIOR SPACE DIMENSION "B" PER DRAWING 313-1 TYPE A, SHALL BE AT LEAST 10" UNLESS OTHERWISE AUTHORIZED BY THE TRANSPORTATION DEPARTMENT.
5. POSITIVE DRAINAGE TO THE OUTLET PIPE IS REQUIRED FOR THE ENTIRE CATCH BASIN FLOOR.
6. THE CATCH BASIN SHALL INCLUDE MAINTENANCE GAUGE STENCILING ON THE INTERIOR WALL OPPOSITE THE FTCD THAT IDENTIFIES THE ACCUMULATED DEBRIS ELEVATION AT 40% AND 100% OF THE FTCD HEIGHT. SEE STD. 313-9 FOR STENCILING REQUIREMENTS.
7. TRANSPORTATION DEPT. APPROVAL REQUIRED WHERE CONNECTOR PIPE SIZE > 42" DIA.
8. CATCH BASINS (NEW OR EXISTING) WITH FOSSIL FILTERS (PER STANDARD 300A OR EQUIVALENT) SHALL REQUIRE SPECIAL CONSIDERATION FOR INCORPORATION OF THE FTCD. A MODIFIED FTCD DESIGN SHALL BE SUBMITTED TO THE TRANSPORTATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
9. ENGINEER MAY PREPARE SITE SPECIFIC CPS DESIGN UTILIZING THE CPS FLOW CHART PER STD. 313-14 IN LIEU OF SIZING PER STD. 313-10 THROUGH 313-13.

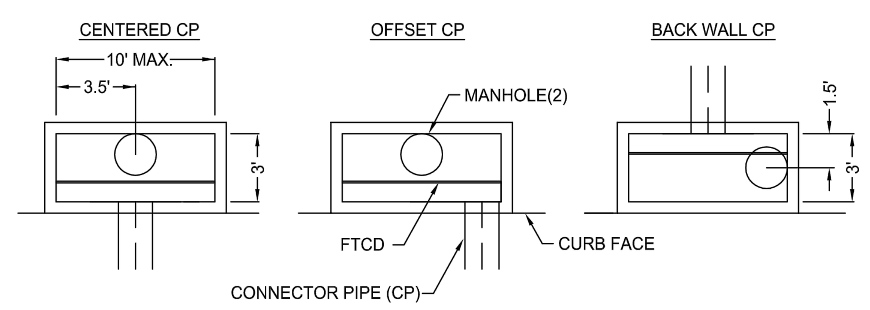
FTCD RETROFIT NOTES

10. WHERE MANHOLE CONFIGURATIONS IN THE EXISTING CATCH BASIN DO NOT CONFORM WITH FTCD LOCATIONS SHOWN IN STD. 313-4 THROUGH 313-8, NEW MANHOLES OPENINGS SHALL BE INSTALLED TO CONFORM WITH THESE REQUIREMENTS. RETROFIT DESIGN DRAWINGS MUST BE APPROVED BY THE TRANSPORTATION DEPARTMENT.
11. IF ADEQUATE SPACE IS NOT AVAILABLE FOR RETROFIT OF EXISTING CATCH BASIN WITH FTCD, A MODIFIED FTCD DESIGN SHALL BE SUBMITTED TO THE TRANSPORTATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
12. CATCH BASINS THAT DO NOT DRAIN TOWARD THE CONNECTOR PIPE SHALL BE MODIFIED TO DRAIN PROPERLY UTILIZING A POLYESTER POLYMER CONCRETE OVERLAY PRODUCT APPROVED BY THE TRANSPORTATION DEPT. PRIOR TO INSTALLATION OF THE FTCD. THE BASIN FLOOR SHALL BE ROUGHENED TO THE SATISFACTION OF THE TRANSPORTATION DEPT. PRIOR TO APPLICATION OF THE OVERLAY. SURFACE PREPARATION MUST PROVIDE FOR MINIMUM OVERLAY THICKNESS PER OVERLAY PRODUCT MANUFACTURER'S SPECIFICATIONS. PROPER DRAINAGE OF BASIN FLOOR SHALL BE ACHIEVED TO THE SATISFACTION OF THE TRANSPORTATION DEPT.

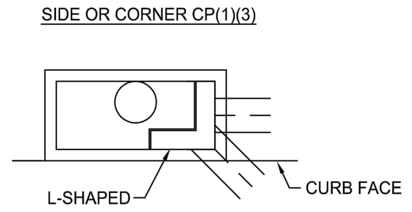
Preliminary 02/25/2021 6:56:29 AM

APPROVED BY: DIRECTOR OF TRANSPORTATION, PATRICIA ROMO, RCE 56064 — DATE

COUNTY OF RIVERSIDE — FTCD - CPS GENERAL NOTES AND RETROFIT NOTES — STANDARD NO. 313 (3 of 14)



SIDE OR CORNER CP(1)(3)



NOTES

(1) FOR CORNER AND SIDE CONNECTOR PIPE (CP) LOCATIONS THE FTCD SHALL BE L-SHAPED TO FULLY COVER THE PIPE OPENING. A SUPPORT FRAME ANGLE SHALL BE PROVIDED IN THE CPS CORNER.
(2) DETAIL VALID FOR CATCH BASIN WIDTHS LESS THAN OR EQUAL TO 10 FEET. MULTIPLE MANHOLES REQUIRED FOR CATCH BASIN WIDTHS GREATER THAN 10 FEET. SEE STANDARD NO. 313-5 AND 313-6.
(3) FOR SIDE OR CORNER CP LOCATIONS WHERE REQUIRED SCREEN LENGTH (L) CANNOT BE ACHIEVED SPECIAL DESIGN MUST BE SUBMITTED TO THE TRANSPORTATION DEPARTMENT FOR REVIEW AND APPROVAL.

Preliminary 02/25/2021 6:57:09 AM

APPROVED BY: DIRECTOR OF TRANSPORTATION, PATRICIA ROMO, RCE 56064 — DATE

COUNTY OF RIVERSIDE — FTCD - CPS SCREEN / MANHOLE LOCATIONS FOR 10' MAX. WIDTH STD. NO. 300 CURB INLET CATCH BASINS — STANDARD NO. 313 (4 OF 14)

PREPARED FOR:
WESTERN REALCO
500 NEWPORT CENTER DRIVE, SUITE 630
NEWPORT BEACH, CA 92660
PHONE: (949) 720-3787

PREPARED BY:
Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

Last Update: 11/6/22
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COUNTY OF RIVERSIDE

PUBLIC WORKS DEPARTMENT

WQMP SITE MAP

RIDER AND PATTERSON BUSINESS CENTER

SWC OF RIDER ST AND PATTERSON AVE

Designed by ____	Approved by	Date ____
Date ____		
Checked by ____		
Date ____		
Designed by ____	Public Works Director	R.C.E. ____
Date ____		
Checked by ____	Sheet 2 of 3 Sheets	
Date ____		

3958/ 2 OF 3 SHEETS

CMP "B"

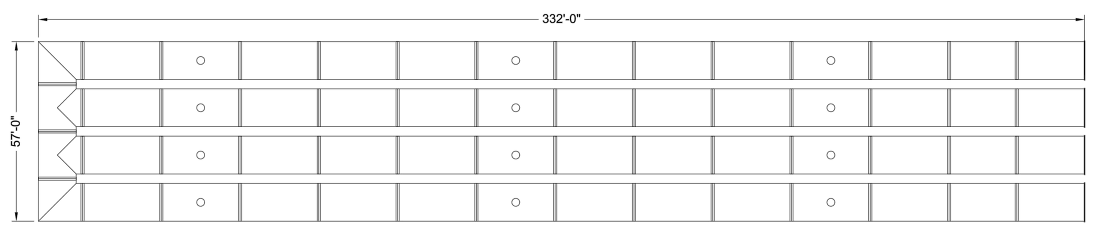
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 1,337 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = 192,700 CF
- PIPE STORAGE VOLUME = 151,211 CF
- BACKFILL STORAGE VOLUME = 41,718 CF
- TOTAL STORAGE PROVIDED = 193,601 CF

PIPE DETAILS
- DIAMETER = 144"
- CORRUGATION = 5x1
- GAGE = 14
- COATING = POLYMER-COATED
- WALL TYPE = PERFORATED
- BARREL SPACING = 36"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 6"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 6"



NOTES
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}$" x $\frac{1}{2}$" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY
SCALE: 1" = 40'

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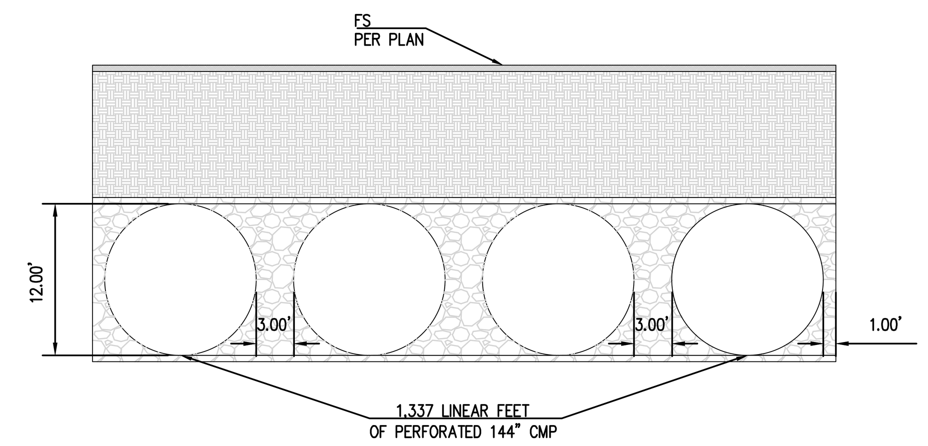
DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO18599 TEI 3958
TEI 3958 (South) - 144" PERFORATED CMP
Perris, CA
DETENTION SYSTEM

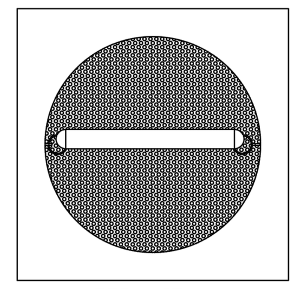
PROJECT No.: 7490 | SEQ. No.: 18599 | DATE: 7/18/2022
DESIGNED: DYO | DRAWN: DYO
CHECKED: DYO | APPROVED: DYO
SHEET NO.: 1



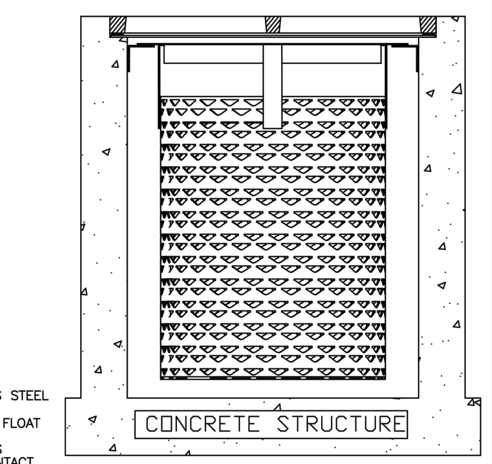
144" PERFORATED UNDERGROUND CMP
SECTION A-A
SCALE: 1"=10'

BIO CLEAN FULL CAPTURE FILTER

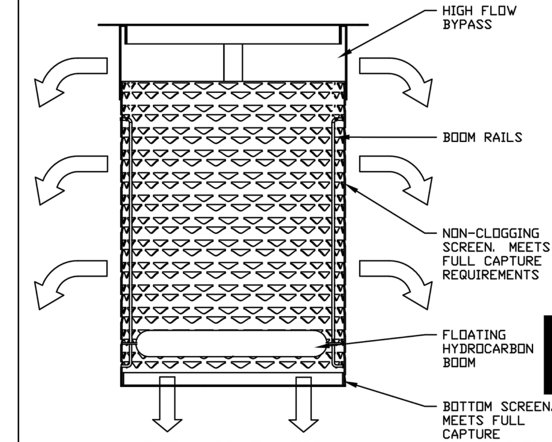
FOR USE IN GRATE INLETS



TOP VIEW



NOTES:
1. ALL HARDWARE, FLANGE, FRAME, SCREENS SHALL BE STAINLESS STEEL
2. HYDROCARBON BOOM SHALL BE 2" DIAMETER AND CONNECTED, MECHANICALLY TO THE FILTER FRAME WITH RAILS ALLOWING IT TO FLOAT ON THE WATER SURFACE REGARDLESS OF HEIGHT
3. SEE PERFORMANCE REPORTS IN MANUFACTURES SPECIFICATIONS
4. OTHER STANDARD AND CUSTOM MODEL SIZES AVAILABLE – CONTACT BIO CLEAN FOR MORE INFORMATION.
5. BASED ON 37% OPEN AREA.
6. CONSIDERS A SAFETY FACTOR OF 2.0.
7. CONSIDERS A LOCAL DEPRESSION PONDIING DEPTH OF 6 INCHES.
8. STORAGE CAPACITY BASED ON THE BASKET HALF FULL.
9. CONCRETE STRUCTURES SOLD SEPARATELY.



FLOW SCHEMATIC

MODEL #	TREATMENT FLOW (CFS)	BYPASS FLOW (CFS)	SOLIDS STORAGE CAPACITY (CF)
BIO-GRATE-FULL 12-12-12	1.55	1.55	0.27
BIO-GRATE-FULL 18-18-18	4.32	3.68	1.05
BIO-GRATE-FULL 24-24-24	7.67	4.83	2.41
BIO-GRATE-FULL 30-30-24	12.97	6.21	3.98
BIO-GRATE-FULL 25-38-24	13.53	6.59	4.16
BIO-GRATE-FULL 36-36-24	19.64	7.60	5.94
BIO-GRATE-FULL 48-48-18	25.59	10.13	7.92

DRAWING: BIO CLEAN GRATE INLET FILTER DETAILS
TYPICAL MODEL DETAIL
WARRANTY: 8 YEAR MANUFACTURERS
BIO CLEAN ENVIRONMENTAL SERVICES, INC. 398 VIA EL CENTRO, OCEANSIDE CA 92058 PHONE: 760-433-7640 FAX: 760-433-3176
DATE: 10/12/17 | SCALE: SF = 15
DRAFTER: M.C.P. | UNITS = INCHES

MEETS FULL CAPTURE REQUIREMENTS
PROJECT:
REVISIONS: DATE:
REVISIONS: DATE:
REVISIONS: DATE:
REVISIONS: DATE:

Bio Clean
A Forterra Company
PAGE 1

CMP "A2"

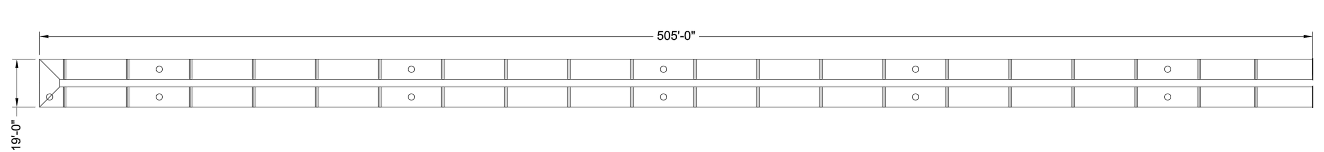
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 1,013 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = 50,847 CF
- PIPE STORAGE VOLUME = 50,919 CF
- BACKFILL STORAGE VOLUME = 0 CF
- TOTAL STORAGE PROVIDED = 50,919 CF

PIPE DETAILS
- DIAMETER = 96"
- CORRUGATION = 5x1
- GAGE = 16
- COATING = POLYMER-COATED
- WALL TYPE = SOLID
- BARREL SPACING = 36"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 6"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 6"



NOTES
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}$" x $\frac{1}{2}$" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY
SCALE: 1" = 50'

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If discrepancies between the supplied information upon which the drawing is based and actual field conditions are encountered as site work progresses, these discrepancies must be reported to Contech immediately for re-evaluation of the design. Contech accepts no liability for designs based on missing, incomplete or inaccurate information supplied by others.

DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO11976 TEI 3958
TEI 3958 (East)
Perris, CA
DETENTION SYSTEM

PROJECT No.: 7490 | SEQ. No.: 11976 | DATE: 6/30/2022
DESIGNED: DYO | DRAWN: DYO
CHECKED: DYO | APPROVED: DYO
SHEET NO.: 1

CMP "A1"

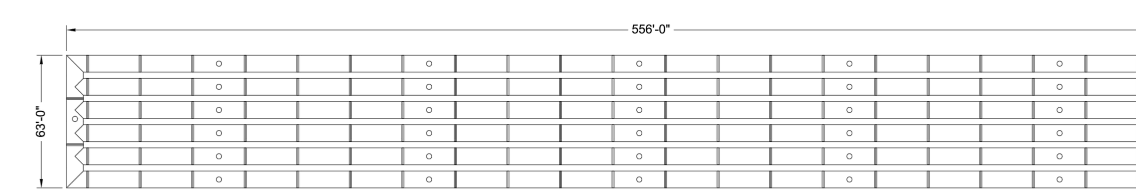
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 3,351 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = 168,276 CF
- PIPE STORAGE VOLUME = 168,440 CF
- BACKFILL STORAGE VOLUME = 0 CF
- TOTAL STORAGE PROVIDED = 168,440 CF

PIPE DETAILS
- DIAMETER = 96"
- CORRUGATION = 5x1
- GAGE = 16
- COATING = POLYMER-COATED
- WALL TYPE = SOLID
- BARREL SPACING = 36"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 6"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 6"



NOTES
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}$" x $\frac{1}{2}$" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
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- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY
SCALE: 1" = 60'

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If discrepancies between the supplied information upon which the drawing is based and actual field conditions are encountered as site work progresses, these discrepancies must be reported to Contech immediately for re-evaluation of the design. Contech accepts no liability for designs based on missing, incomplete or inaccurate information supplied by others.

DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO18694 TEI 3958
TEI 3958 (North)
Perris, CA
DETENTION SYSTEM

PROJECT No.: 7490 | SEQ. No.: 18694 | DATE: 7/18/2022
DESIGNED: DYO | DRAWN: DYO
CHECKED: DYO | APPROVED: DYO
SHEET NO.: 1

PREPARED FOR:
WESTERN REALCO
500 NEWPORT CENTER DRIVE, SUITE 630
NEWPORT BEACH, CA 92660
PHONE: (949) 720-3787

PREPARED BY:
Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

Last Update: 11/6/22
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COUNTY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

WQMP SITE MAP

RIDER AND PATTERSON BUSINESS CENTER

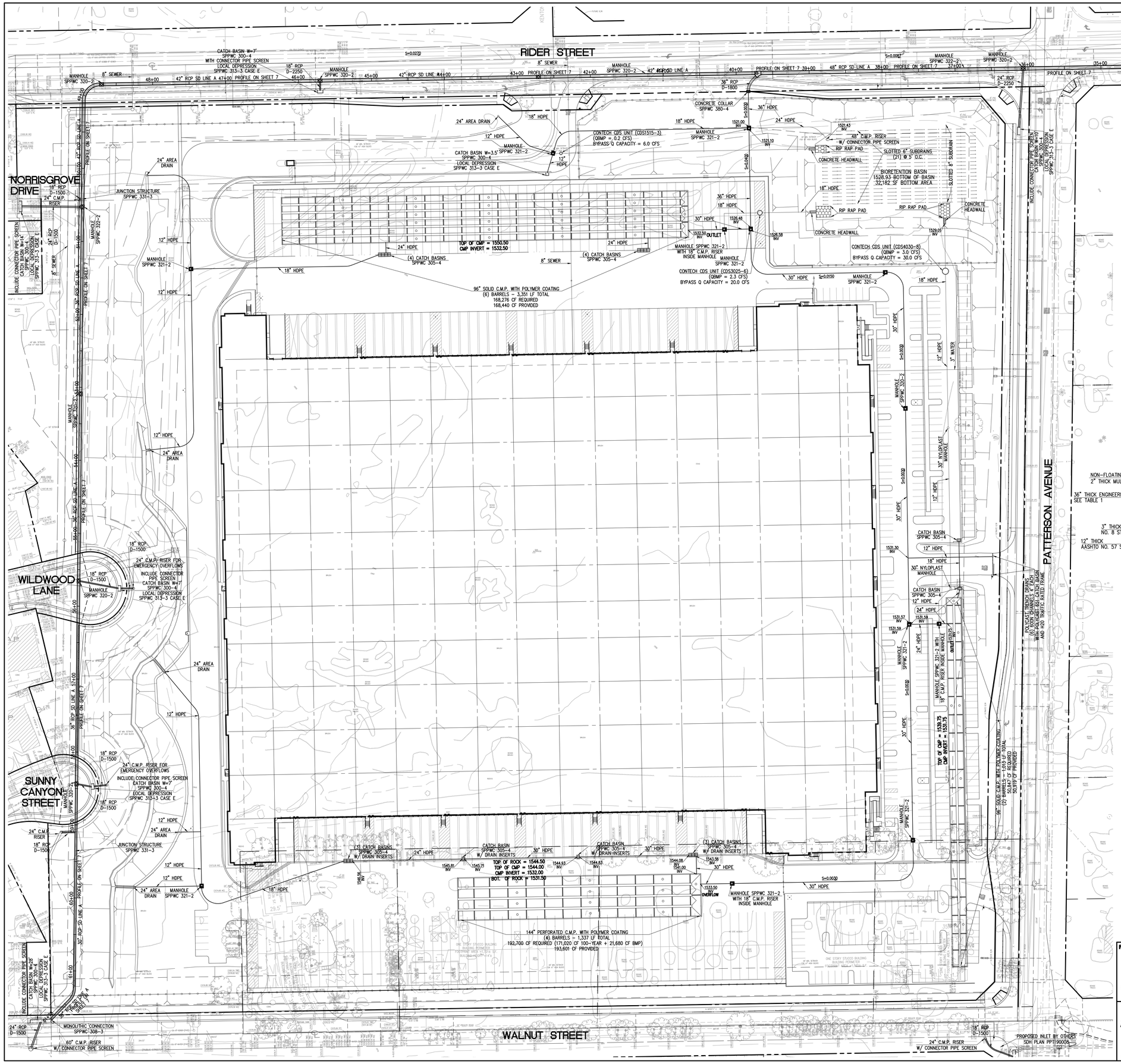
SWC OF RIDER ST AND PATTERSON AVE

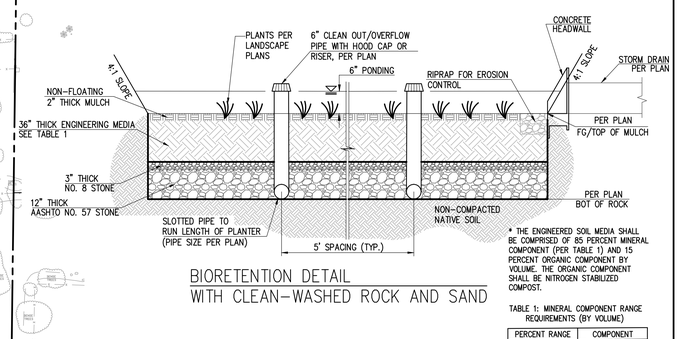
Designed by ______
Date ______
Checked by ______
Date ______
Designed by ______
Date ______
Checked by ______
Date ______

Approved by ______ Date ______
Public Works Director ______ R.C.E. ______

Sheet 3 of 3 Sheets

3958/ 3 OF 3 SHEETS





BIORETENTION DETAIL
WITH CLEAN-WASHED ROCK AND SAND

* THE ENGINEERED SOIL MEDIA SHALL BE COMPRISED OF 85 PERCENT MINERAL COMPONENT (PER TABLE 1) AND 15 PERCENT ORGANIC COMPONENT BY VOLUME. THE ORGANIC COMPONENT SHALL BE NITROGEN STABILIZED COMPOST.

TABLE 1: MINERAL COMPONENT RANGE REQUIREMENTS (BY VOLUME)

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

0 25 50 100 150
SCALE: 1"=50'

PREPARED FOR:
WESTERN REALCO
500 NEWPORT CENTER DRIVE, SUITE 630
NEWPORT BEACH, CA 92660
PHONE: (949) 720-3787
CONTACT: JEREMY MAPE
EMAIL: JMAPE@WESTERNREALCO.COM

Thienes Engineering, Inc.
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14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173
Last Update:7/19/22
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COUNTY OF RIVESIDE
PUBLIC WORKS DEPARTMENT

CONCEPTUAL STORM DRAIN PLAN

RIDER AND PATTERSON BUSINESS CENTER
SWC OF RIDER ST AND PATTERSON AVE

Designed by
Date
Checked by
Date
Designed by
Date
Checked by
Date

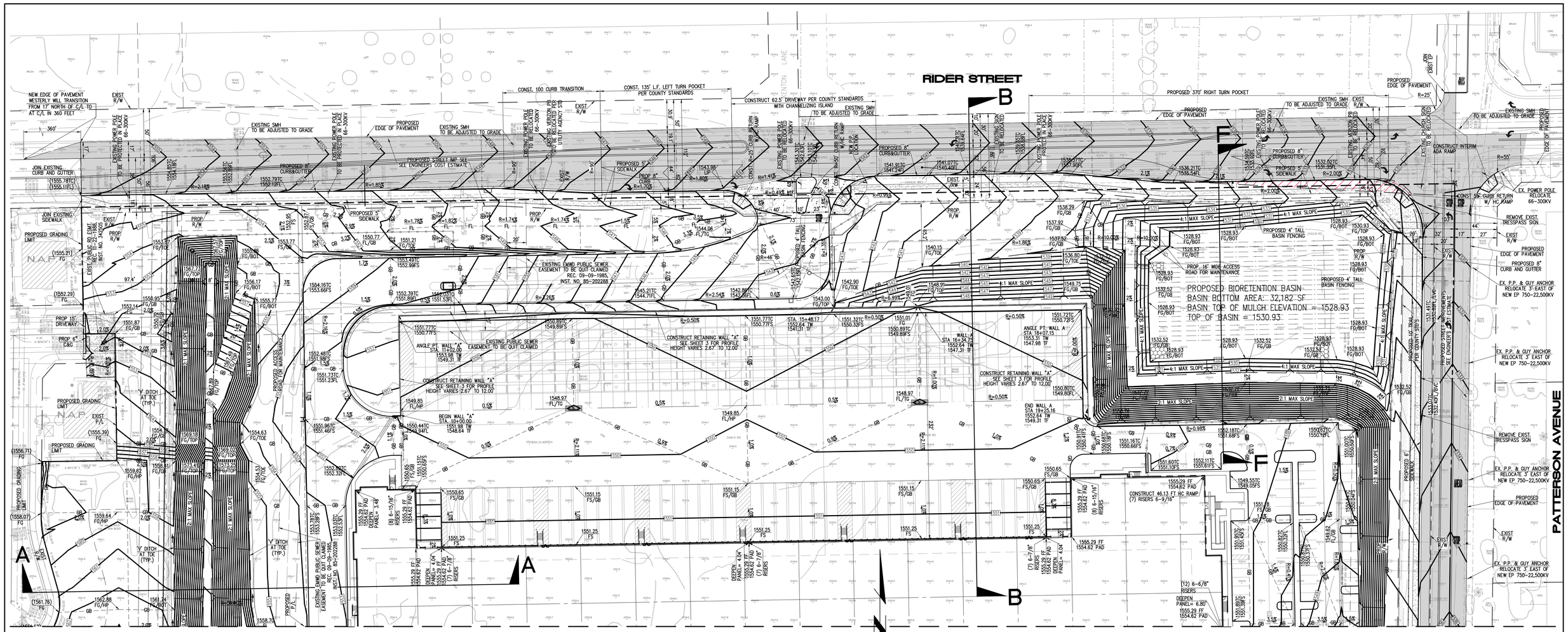
Approved by
Date
Public Works Director
R.C.E. XXXXX

Sheet 6 of 7 Sheets

3958/ 6 OF 7 SHEET

Appendix 2: Construction Plans

Grading and Drainage Plans



LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE UNINCORPORATED AREA OF, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A:

THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 13, TOWNSHIP 4 SOUTH, RANGE 4 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY UNITED STATES GOVERNMENT SURVEY:

EXCEPTING THEREFROM THE FOLLOWING DESCRIBED PROPERTY:
THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 13, TOWNSHIP 4 SOUTH, RANGE 4 WEST, SAN BERNARDINO BASE AND MERIDIAN, DESCRIBED AS FOLLOWS:
BEGINNING AT THE SOUTHEAST CORNER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 13; THENCE WESTERLY ALONG THE SOUTHERLY LINE OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 13, A DISTANCE OF 218.67 FEET TO A POINT ON THE SOUTHERLY PROLONGATION OF THE WESTERLY LINE OF THE LAND CONVEYED TO CHARLES R. WILKERSON AND STELLA C. WILKERSON, HUSBAND AND WIFE AS JOINT TENANTS, BY DEED RECORDED FEBRUARY 13, 1964 AS INSTRUMENT NO. 18135 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA, AND THE TRUE POINT OF BEGINNING; THENCE CONTINUING WESTERLY ALONG THE SOUTHERLY LINE OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 13, A DISTANCE OF 378.8 FEET; THENCE NORTHERLY, PARALLEL WITH THE EASTERLY LINE OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 13, A DISTANCE OF 250 FEET TO THE SOUTHERLY LINE OF THE LAND CONVEYED TO LORNE FROATS, ET UX, HUSBAND AND WIFE AS JOINT TENANTS, BY DEED RECORDED JULY 18, 1963 AS INSTRUMENT NO. 75060 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF SAID LAND CONVEYED TO LORNE FROATS, ET UX, 378.8 FEET TO THE NORTHWEST CORNER OF SAID LAND CONVEYED TO CHARLES R. WILKERSON, ET UX; THENCE SOUTHERLY ALONG THE WESTERLY LINE OF SAID LAND CONVEYED TO CHARLES R. WILKERSON, ET UX, AND ALONG THE SOUTHERLY PROLONGATION OF THE WESTERLY LINE THEREOF, 250 FEET TO THE TRUE POINT OF BEGINNING;

EXCEPTING THEREFROM THE SOUTHERLY 20 FEET THEREOF;

RESERVING UNTO THE GRANTOR WITH THE RIGHT TO CONVEY TO OTHERS A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS, ROAD AND PUBLIC UTILITY PURPOSES, OVER AND ACROSS THE NORTHERLY 30 FEET OF THE ABOVE DESCRIBED PROPERTY.

ALSO EXCEPTING THEREFROM THE FOLLOWING DESCRIBED PROPERTY:
THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 13, TOWNSHIP 4 SOUTH, RANGE 4 WEST, SAN BERNARDINO BASE AND MERIDIAN, DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER AT A POINT WHICH IS 20 FEET NORTH OF THE SOUTHEAST CORNER THEREOF; THENCE NORTH, ON SAID EAST LINE, 230 FEET TO A POINT THEREON; THENCE WEST, PARALLEL TO THE SOUTH LINE OF SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER 218.67 FEET; THENCE SOUTH, PARALLEL TO THE EAST LINE OF SAID NORTHEAST QUARTER 230 FEET; THENCE EAST, PARALLEL TO THE SOUTH LINE OF SAID NORTHEAST QUARTER 218.67 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPTING THEREFROM THE LAND DESCRIBED AS PARCELS 1, 2 AND 3 OF THAT CERTAIN CERTIFICATE OF COMPLIANCE NO. 1374 RECORDED MARCH 27, 1984 AS INSTRUMENT NO. 61929 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

ALSO EXCEPT THAT PORTION CONVEYED TO THE COUNTY OF RIVERSIDE BY DEED RECORDED MAY 16, 1984 AS INSTRUMENT NO. 84-102964, OF OFFICIAL RECORDS.

PARCEL B:

THE EAST HALF OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 13, TOWNSHIP 4 SOUTH, RANGE 4 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY UNITED STATES GOVERNMENT SURVEY;

EXCEPTING THEREFROM THE NORTHERLY 50 FEET CONVEYED TO THE COUNTY OF RIVERSIDE, BY DEEDS RECORDED AUGUST 30, 1983, AS INSTRUMENT NO. 83-176740 AND OCTOBER 5, 1983, AS INSTRUMENT NO. 83-206241, BOTH OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

ALSO EXCEPTING THEREFROM ANY PORTION INCLUDED IN TRACT 20037-1 AS SHOWN BY MAP ON FILE IN BOOK 193 PAGES 74 THROUGH 77 INCLUSIVE OF MAPS, RECORDS OF RIVERSIDE COUNTY.

FOR CONVEYANCING PURPOSES ONLY:
APN 317-210-018 (AFFECTS PARCEL A),
317-210-022 (AFFECTS PORTION OF PARCEL B) AND
317-210-023 (AFFECTS PORTION OF PARCEL B)

SURVEYOR'S NOTES:

1. THE TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:
CADO PERRIS LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

2. PROJECT ADDRESS: VACANT LAND
RIVERSIDE COUNTY, CALIFORNIA

3. ASSESSOR'S PARCEL NUMBER: 317-210-018, -022 AND -023

4. PARCEL AREAS:

LEGAL DESCRIPTION FEE:	1,509,139 S.F./34.645 ACRES
EXISTING STREET AREA:	23,832 S.F./ 0.547 ACRES
PROPOSED STREET AREA:	43,263 S.F./ 0.993 ACRES
NET AREA = FEE - STREET:	1,442,044 S.F./33.105 ACRES

5. ZONING INFORMATION:
(THE FOLLOWING ZONE DESIGNATIONS ARE PER COUNTY OF RIVERSIDE PLANNING DEPT.)

-- EXISTING
GENERAL PLAN DESIGNATION: MDR - MEDIUM DENSITY RESIDENTIAL
ZONE DESIGNATION: R-1 ONE-FAMILY DWELLINGS, CZ NUMBER 6312
SPECIAL ZONE: MARB C2, WR-MSHCP 24.32-B

-- PROPOSED - PORTION
GENERAL PLAN DESIGNATION: I-P INDUSTRIAL PARK
ZONE DESIGNATION: I-P INDUSTRIAL PARK
SPECIAL ZONE: MARB C2, WR-MSHCP 24.32-B

-- PROPOSED - PORTION
GENERAL PLAN DESIGNATION: MDR - MEDIUM DENSITY RESIDENTIAL
ZONE DESIGNATION: R-1 ONE-FAMILY DWELLINGS, CZ NUMBER 6312
SPECIAL ZONE: MARB C2, WR-MSHCP 24.32-B

THE PROPOSED DEVELOPMENT IS PLANNED TO HAVE:
I-P INDUSTRIAL PARK
- 508,930 SQUARE FOOT INDUSTRIAL BUILDING AND SELF-STORAGE FACILITY

R-1 ONE-FAMILY DWELLINGS
- PRIVATE NEIGHBORHOOD PARK AND TWO RESIDENTIAL LOTS

NOTE: FOLLOWING ARE SELECTED ZONING AND/OR DEVELOPMENT REQUIREMENTS OF PARTICULAR RELEVANCE TO THE PROPERTY SHOWN HEREON, AND SHOULD NOT BE CONSTRUED AS REPRESENTING THE TOTALITY OF SUCH REQUIREMENTS THAT MAY BE ASSOCIATED WITH SAID PROPERTY. IT IS RECOMMENDED THAT INTERESTED PARTIES CONSULT AN OFFICIAL COPY OF THE COMPLETE MUNICIPAL ZONING CODE, AS WELL AS ANY EXISTING AGREEMENTS OR OTHER SIMILAR DOCUMENTS FOR A GREATER DEMONSTRATION OF THE REQUIREMENTS ASSOCIATED WITH THE PROPERTY SHOWN HEREON.

6A. I-P INDUSTRIAL PARK, ARTICLE X
TYPICAL USES INCLUDE:
PLANNED INDUSTRIAL AREA WITH SPECIAL ATTENTION TO CIRCULATION, PARKING, UTILITY NEEDS, AESTHETICS, AND COMPATIBILITY. DEVELOPMENT SUBJECT TO AREA SITE IMPROVEMENT, LANDSCAPING AND PERFORMANCE STANDARDS. ALL DEVELOPMENT REQUIRES PILOT PLAN APPROVAL. LIMITED USES WITH CONDITIONAL USE PERMIT APPROVAL.

MINIMUM LOT REQUIREMENTS: SQ. FEET: 20,000 WIDTH: 100 FEET

MINIMUM SETBACKS: FRONT: 25 FEET (PATTERSON ASSUMED FRONT)
SIDE: 10 FEET
REAR: 15 FEET
* MINIMUM 25 FEET SETBACK ON ANY STREET.
* MINIMUM 50 FEET SETBACK ON ANY BOUNDARY WHERE PROPERTY ABUTS RESIDENTIAL OR COMMERCIALLY ZONED PROPERTY.
* SETBACKS INCREASE FOR BUILDINGS OVER 35 FEET IN HEIGHT. ANY PORTION OF A STRUCTURE THAT EXCEEDS 35 FEET IN HEIGHT SHALL BE SET BACK FROM EACH YARD SETBACK LINE NOT LESS THAN TWO FEET FOR EACH ONE FOOT IN HEIGHT THAT IS IN EXCESS OF 35 FEET.

MAXIMUM STRUCTURAL HEIGHT: ALL BUILDINGS AND STRUCTURES SHALL NOT EXCEED 50 FEET IN HEIGHT, UNLESS A HEIGHT UP TO 75 FEET FOR BUILDINGS, OR 105 FEET FOR OTHER STRUCTURES IS SPECIFICALLY PERMITTED UNDER THE PROVISIONS OF SECTION 18.34. OF THIS ORDINANCE

PARKING REQUIREMENTS:
WAREHOUSES AND WHOLESALING: 1 SPACE/2,000 SQ. FT. OF GROSS FLOOR AREA
MINI-WAREHOUSES, SELF STORAGE: 2 SPACES/3 EMPLOYEES

6B. R-1 ONE FAMILY DWELLINGS, ARTICLE VI
TYPICAL USES INCLUDE:
ONE-FAMILY DWELLINGS, INCLUDING MOBILE HOMES ON PERMANENT FOUNDATIONS, LIMITED AGRICULTURE, NONCOMMERCIAL KEEPING OF HORSES WITH A MINIMUM LOT OF 20,000 SQ. FT. AND 100 FT. WIDTH, NONCOMMERCIAL KEEPING OF POULTRY AND RABBITS WITH MINIMUM LOT AREA OF 1 ACRE, KEEPING OF 2 SHEEP OR GOATS WITH MINIMUM LOT AREA OF 2 ACRES, AND HOME OCCUPATIONS. MOBILE HOME PARKS WITH APPROVED CONDITIONAL USE PERMIT.

MINIMUM LOT AREA: 7,200 SQ. FEET:
MINIMUM LOT WIDTH: 60 FEET
MINIMUM LOT DEPTH: 100 FEET

MINIMUM SETBACKS: FRONT: 20 FEET
SIDE: 5 FEET AND/OR 10 FEET ON CORNER LOTS
(FRONTAGE ON 2 STREETS)
REAR: 10 FEET MAXIMUM

STRUCTURAL HEIGHT: 40 FEET FLOORS: 3

PARKING REQUIREMENTS:
SINGLE FAMILY: 2 SPACES/DWELLING UNIT

8. SUBJECT SITE DESCRIBED HEREON IS CURRENTLY VACANT AND UNDEVELOPED.

7. THE PROPERTY INDICATED HEREON IS SITUATED WITHIN THE FLOOD INSURANCE RATE MAP (F.I.R.M.) WITH MAP NO. 06025C1410G, EFFECTIVE DATE: AUGUST 28, 2008, COMMUNITY NUMBER: 060245, PANEL NUMBER: 1410, SUFFIX: "G", ZONE "X-UNSHADED" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN).

9. GEOLOGICAL HAZARDS:
A. ALQUIST-PRIOLO SPECIAL STUDIES ZONES:
THE STATE OF CALIFORNIA HAS NOT PROVIDED SUFFICIENT INFORMATION TO DETERMINE IF THE SUBJECT PROPERTY IS OUTSIDE OF ANY ALQUIST PRIOLO SPECIAL STUDIES ZONES BECAUSE NO SPECIAL STUDIES ZONES OFFICIAL MAP FOR STEELE PEAK QUADRANGLE HAS BEEN PUBLISHED AS OF THIS DATE.

B. SEISMIC HAZARD ZONES:
THE STATE OF CALIFORNIA HAS NOT PROVIDED SUFFICIENT INFORMATION TO DETERMINE IF THE SUBJECT PROPERTY IS OUTSIDE OF ANY ZONE REQUIRING INVESTIGATION FOR LIQUEFACTION OR FOR EARTHQUAKE-INDUCED LANDSLIDES BECAUSE NO SEISMIC HAZARD ZONES OFFICIAL MAP FOR STEELE PEAK QUADRANGLE HAS BEEN PUBLISHED AS OF THIS DATE.

10. THIENES ENGINEERING, INC. HAS PERFORMED NO INDEPENDENT TITLE INVESTIGATION NOR OTHERWISE SEARCHED FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP, TITLED EVIDENCE OR ANY OTHER SIMILAR INFORMATION THAT MAY BE DISCLOSED BY AN ACCURATE AND CURRENT "ABSTRACT OF TITLE" OR "TITLE POLICY." EASEMENTS FOR SHOWN HEREON BASED ON INFORMATION DISCLOSED BY A TITLE REPORT, LISTED HEREON, WHICH HAS BEEN DRAFTED, AND IN SOME CASES UPDATED AND/OR REVISED, BY A TITLE INSURANCE COMPANY, ALSO LISTED HEREON, AND SUPPLIED TO THE UNDERSIGNED THEREBY.

11. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS PART OF THIS SURVEY.

12. THIS SURVEY DOES NOT INCLUDE LOCATIONS OF OR ENCROACHMENTS BY SUB-SURFACE FOOTINGS AND/OR FOUNDATIONS OF BUILDINGS, WALLS OR OTHER IMPROVEMENTS SHOWN ON THIS MAP.

13. SUBSTRUCTURE UTILITIES ARE SHOWN HEREON BASED SOLELY ON INFORMATION DISCLOSED TO UNDERSIGNED BY LOCAL, STATE AND FEDERAL GOVERNMENTAL AGENCIES AND/OR INFORMATION DISCLOSED TO UNDERSIGNED BY PRIVATE UTILITY COMPANIES. ALTHOUGH SAID SUBSTRUCTURE UTILITIES SHOWN HEREON ARE BELIEVED TO BE REASONABLY ACCURATE, PHYSICAL FIELD VERIFICATION OF THE CHARACTER AND LOCATIONS OF SAID SUBSTRUCTURE UTILITIES IS REQUIRED. THIENES ENGINEERING, INC. MAKES NO GUARANTEE, WARRANTY OR OTHER REPRESENTATION, EITHER EXPRESSLY OR IMPLIED, AS TO THE ACCURACY AND/OR THOROUGHNESS OF SUCH INFORMATION. THEREFORE, ALL GENERALIZED STATEMENTS SHOWN HEREON, INCLUDING BUT NOT LIMITED TO, "ALL UTILITIES," "ALL KNOWN UTILITIES," "ALL UTILITIES KNOWN TO THE UNDERSIGNED," AND THE LIKE, AS WELL AS REFERENCES TO LISTS OF UTILITIES ARE TO BE CONSTRUED AS BEING STRICTLY REFERENCES TO ONLY THOSE UTILITIES DISCLOSED TO THE UNDERSIGNED BY SAID LOCAL, STATE AND FEDERAL GOVERNMENTAL AGENCIES AND/OR INFORMATION DISCLOSED BY SAID PRIVATE UTILITY COMPANIES, AND EXCLUDES ALL UTILITIES AND UTILITY-RELATED INFORMATION, IF ANY, WHICH HAS NOT BEEN DISCLOSED TO THE UNDERSIGNED.

14. AS A MATTER OF POLICY, ONLY OFFICIALLY RELEASED COPIES OF THIS SURVEY HAVE A SIGNATURE TOGETHER WITH THE RELEASE/REVISION DATE(S) SHOWN. ANY MODIFICATIONS, UPDATES, OR REVISIONS WITH THEIR EFFECTIVE RELEASE DATES WILL BE SHOWN THEREON. ANY PARTIES REQUIRING INFORMATION WHICH CANNOT BE DERIVED FROM THIS SURVEY AFTER THE INITIAL RELEASE DATE ARE ADVISED TO CONTACT THE OFFICE OF THE PREPARER TO INQUIRE ON THE PRESENT STATUS OF THE SURVEY AND IF LATER VERSIONS HAVE BEEN RELEASED. COPIES OF THIS SURVEY LACKING THE HEREIN ABOVE MENTIONED SIGNATURE ARE TO BE CONSIDERED AS UNOFFICIAL VERSIONS.

15. PHOTOGRAMMETRIC MAPPING PROCEDURES MAY HAVE BEEN UTILIZED AS THE BASIS FOR THE LOCATION OF CERTAIN FEATURES SHOWN HEREON (EXCLUDING BOUNDARIES) WHERE GROUND MEASUREMENTS ARE NOT OTHERWISE NECESSARY TO LOCATE THOSE FEATURES TO AN APPROPRIATE AND ACCEPTABLE ACCURACY RELATIVE TO A NEARBY BOUNDARY. THE MAP ACCURACY STANDARD SUPPLIED BY THE PHOTOGRAMMETRIST INDICATES THAT NINETY (90) PERCENT OF ALL PLANIMETRIC FEATURES WHICH ARE WELL-DEFINED ON THE PHOTOGRAPHS ARE PLOTTED SO THAT THEIR POSITION ON THE FINISHED MAPS SHALL BE ACCURATE TO WITHIN 0.5 FEET OF THEIR TRUE COORDINATE POSITION, WHICH COULD BE DETERMINED BY TEST SURVEYS. NONE OF THE FEATURES TESTED SHOULD BE MISPLACED BY MORE THAN 1.0 FEET IN SUCH A TEST SURVEY. IF CONTOURS ARE SHOWN HEREON AND IF SAID CONTOURS WERE PLOTTED BY PHOTOGRAMMETRIC MAPPING PROCEDURES, THEN NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID-LINE CONTOURS SHALL HAVE ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER. THE REMAINING TEN (10) PERCENT OF SPOT ELEVATIONS SHALL BE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL. IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER OBSCURES THE GROUND, THE CONTOURS ARE SHOWN AS DASHED LINES AND THEY ARE PLOTTED AS ACCURATELY AS POSSIBLE UNDER THOSE CONDITIONS. NINETY (90) PERCENT OF ALL SPOT ELEVATIONS PLOTTED BY PHOTOGRAMMETRIC MAPPING PROCEDURES SHALL HAVE AN ACCURACY OF AT LEAST ONE-FORTH (1/4) THE CONTOUR INTERVAL. THE REMAINING TEN (10) PERCENT SHALL BE NOT IN ERROR BY MORE THAN ONE-HALF (1/2) THE CONTOUR INTERVAL.

16. IN THE PROCESS OF CONDUCTING OUR FIELDWORK WE DID NOT FIND EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS OVER AND ABOVE SITE IMPROVEMENTS DELINEATED HEREON.

17. THERE IS NO OBSERVABLE EVIDENCE OF CHANGES IN STREET RIGHT-OF-WAY LINES, RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS OVER AND ABOVE SITE IMPROVEMENTS DELINEATED HEREON.

18. SUBJECT PROPERTY HAS DIRECT ACCESS TO RIDER STREET AND PATTERSON AVENUE. BOTH ARE PUBLICLY DEDICATED AND MAINTAINED RIGHT-OF WAYS.

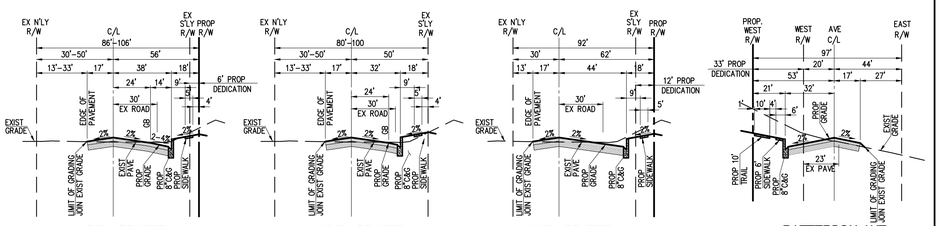
SHEET INDEX

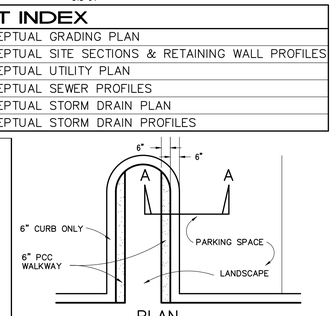
1-2	CONCEPTUAL GRADING PLAN
3	CONCEPTUAL SITE SECTIONS & RETAINING WALL PROFILES
4	CONCEPTUAL UTILITY PLAN
5	CONCEPTUAL SEWER PROFILES
6	CONCEPTUAL STORM DRAIN PLAN
7-8	CONCEPTUAL STORM DRAIN PROFILES

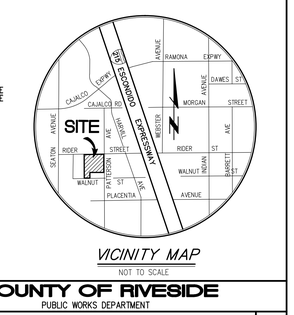
6/16/2022

EARTHWORK BALANCE CALCULATIONS
PROJECT: Capstone Logistics/Rider Street
JOB#: 3958

K.	SITE AREA:	1,930,189 SF
L.	SUBSIDENCE FACTOR:	0.188
M.	SHRINKAGE FACTOR:	15.0 %
N.	SITE STRIPPING FACTOR:	0.04
O.	OVEREXCAVATION:	99,477 CY
A.	CALCULATED CUT:	240,750 CY
B.	FOOTING AND UTILITY SPOILS	12,000 CY
B1.	OFFSITE SPOILS (STREET AND STORM DRAIN)	5,200
C.	**TOTAL CUT: (A+B)**	**257,950 CY**
D.	CALCULATED FILL:	188,072 CY
E.	LIGHT PAVING FILL:	- CY
F.	SUBSIDENCE: (L*K)/27=	13,404 CY
G.	SHRINKAGE: (M/100)C=	38,693 CY
H.	SITE STRIPPING	2,860
I.	OVEREXCAVATION SHRINKAGE	14,922 CY
J.	**TOTAL FILL: (D+E+F+G+H)=**	**257,950 CY**
K.	**TOTAL (IMPORT) OR EXPORT:**	**0 CY**







VICINITY MAP
NOT TO SCALE

PREPARED FOR:
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COUNTY OF RIVESIDE
PUBLIC WORKS DEPARTMENT

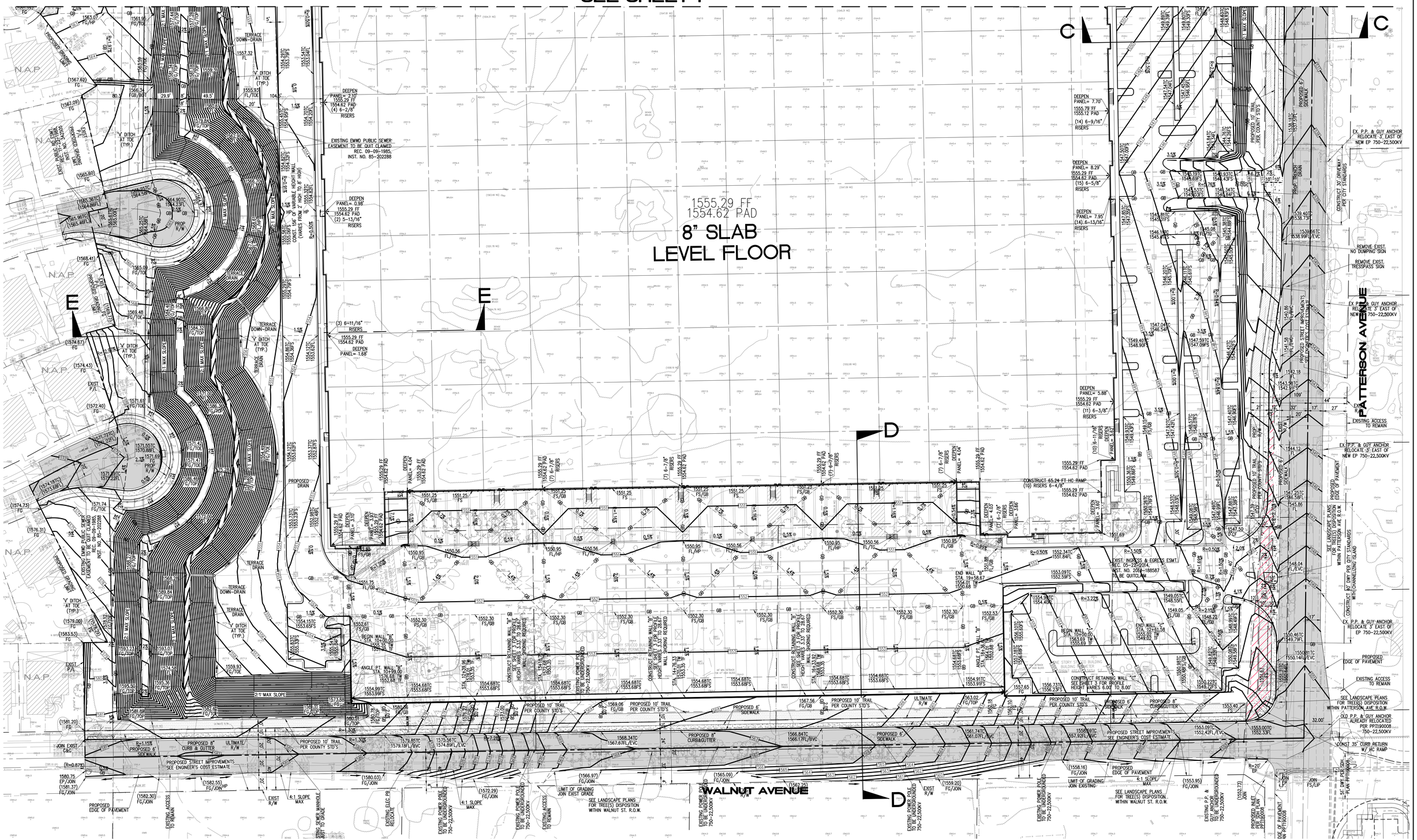
CONCEPTUAL GRADING PLAN

RIDER AND PATTERSON BUSINESS CENTER
SWC OF RIDER ST AND PATTERSON AVE

Designed by _____ Date _____
Approved by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Public Works Director _____ R.C.E. XXXXX
Checked by _____ Date _____
Sheet 1 of 7 Sheets

3958/ 1 OF 7 SHEET

SEE SHEET 1



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COUNTY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT

CONCEPTUAL GRADING PLAN

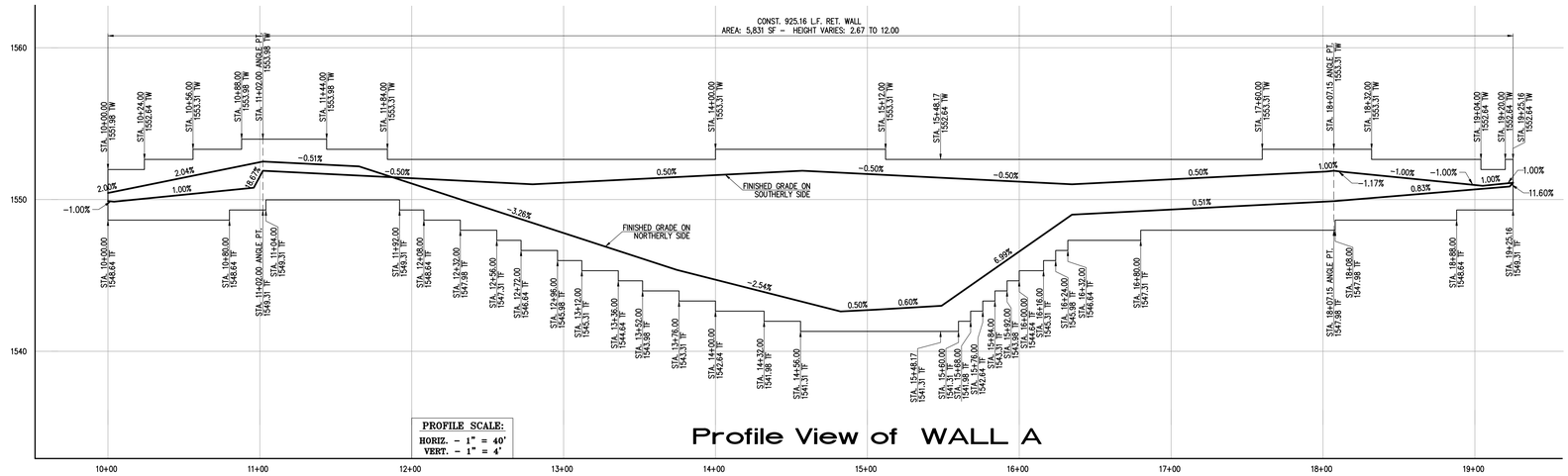
RIDER AND PATTERSON BUSINESS CENTER
SWC OF RIDER ST AND PATTERSON AVE

Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

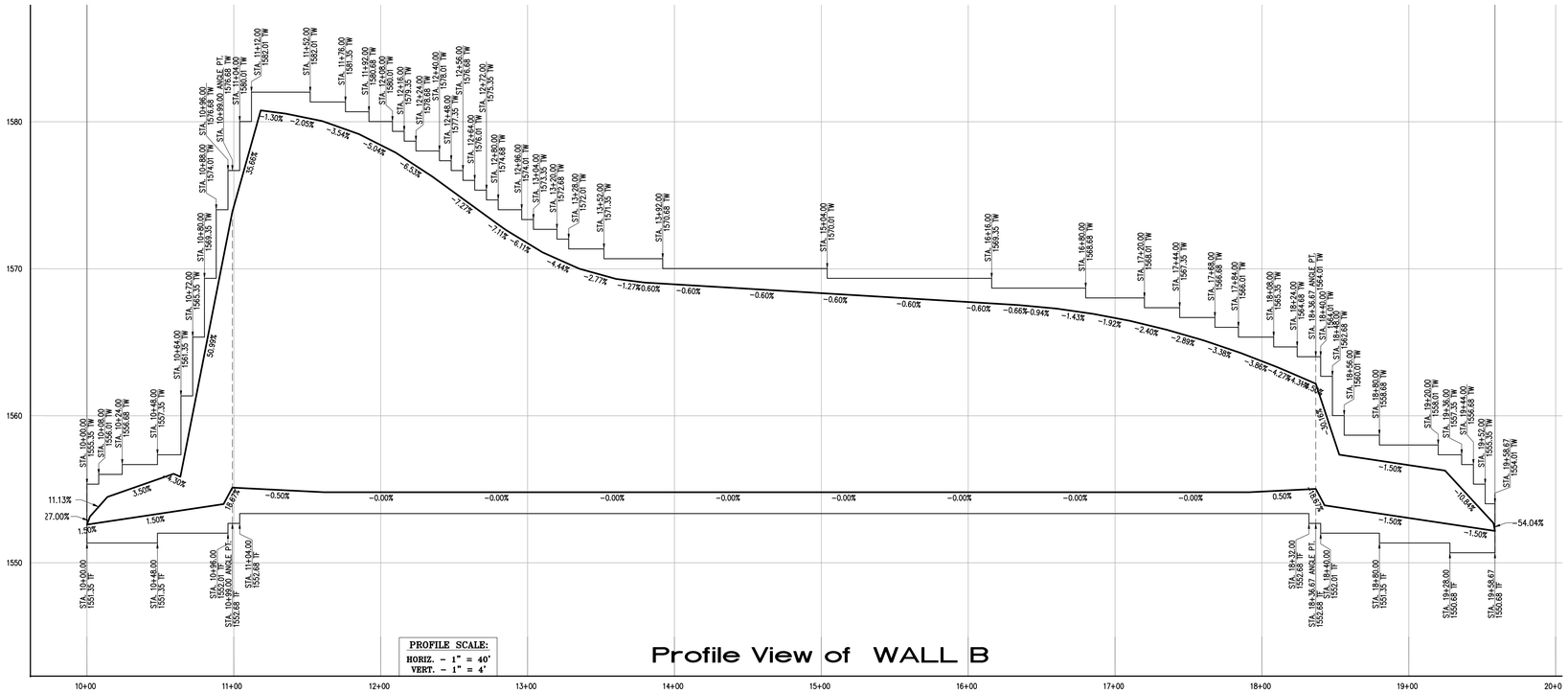
Approved by _____ Date _____
Public Works Director _____ R.C.E. XXXXX

Sheet 2 of 7 Sheets

3958/ 2 OF 7 SHEET



Profile View of WALL A



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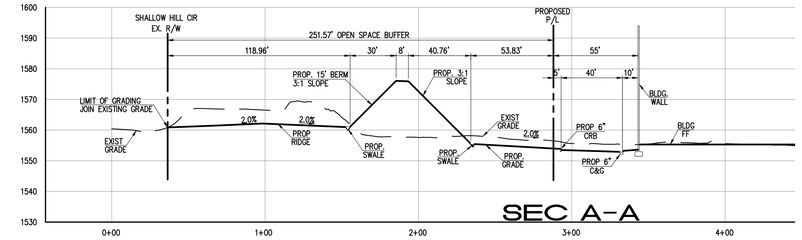

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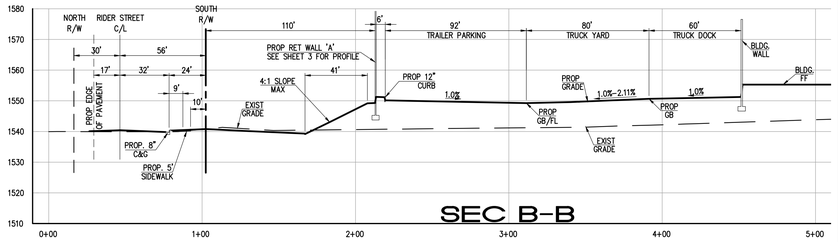

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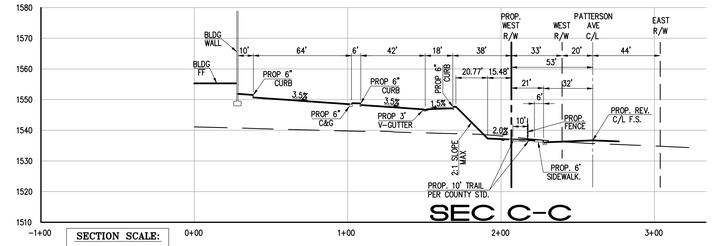
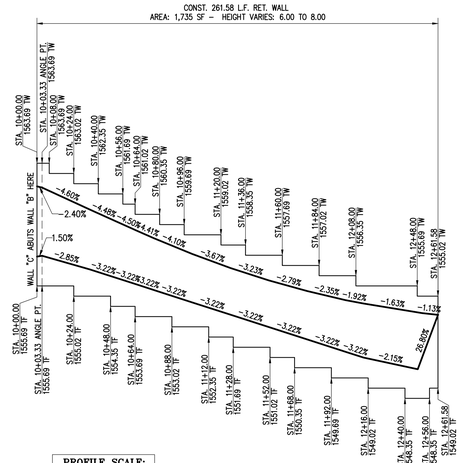
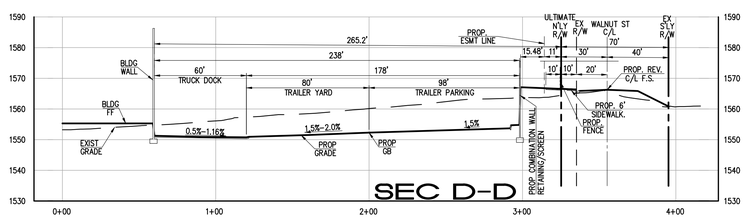


SEC C-C

SECTION SCALE:
HORIZ. – 1" = 40'
VERT. – 1" = 20'





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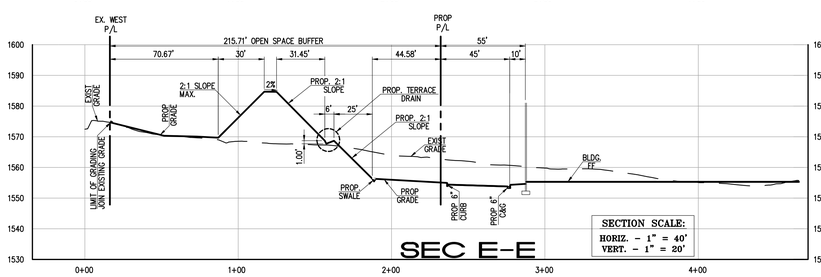

SEC E-E

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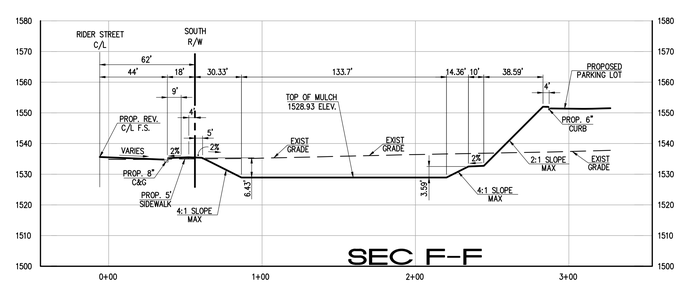
VERT. – 1" = 20'



SEC F-F

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COUNTY OF RIVESIDE
PUBLIC WORKS DEPARTMENT

CONCEPTUAL GRADING SECTIONS

RIDER AND PATTERSON BUSINESS CENTER
SWC OF RIDER ST AND PATTERSON AVE

Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

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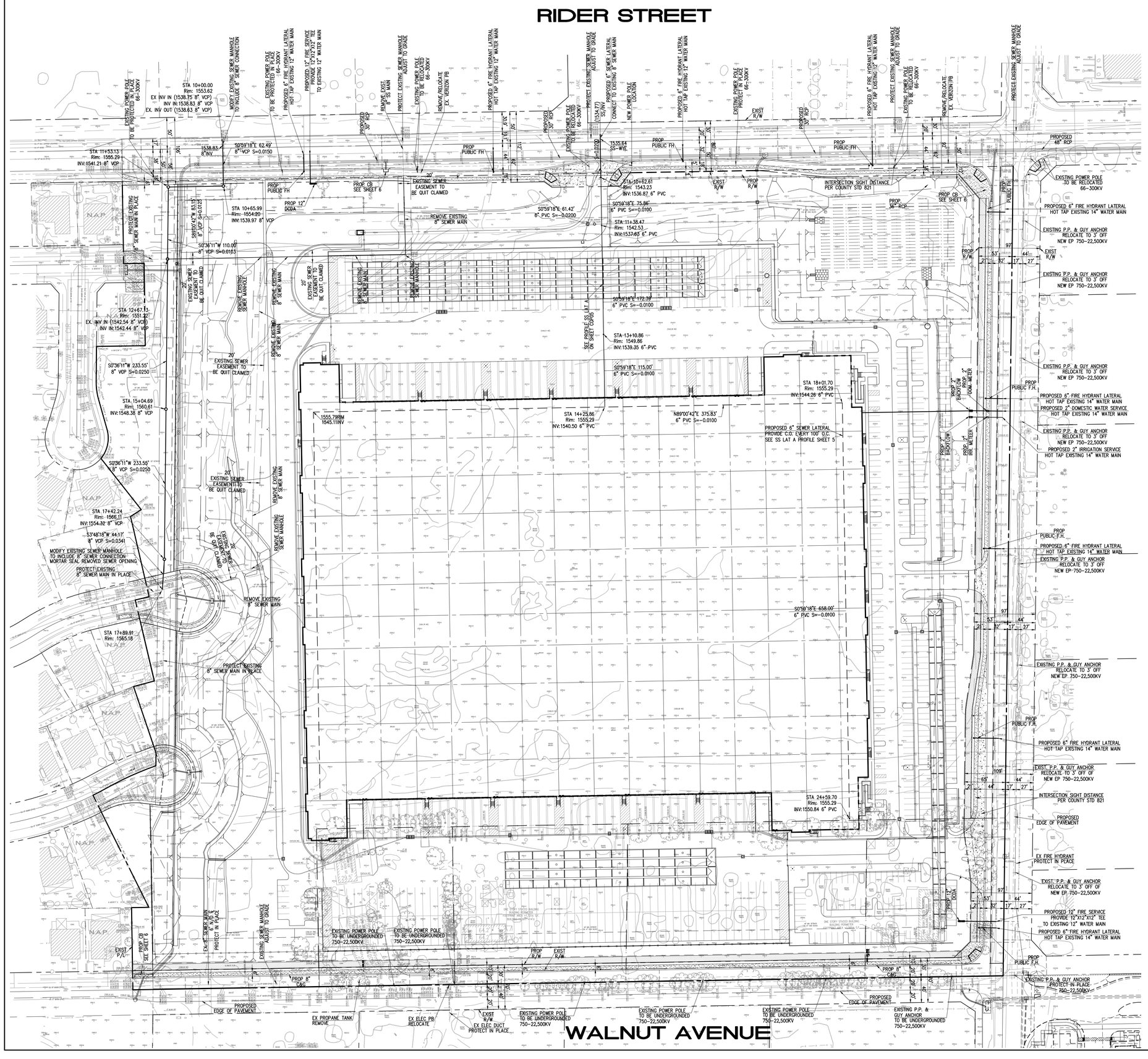
Public Works Director _____ R.C.E. XXXXX

Sheet 3 of 7 Sheets

3958/ 3 OF 7 SHEET



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COUNTY OF RIVESIDE

PUBLIC WORKS DEPARTMENT

CONCEPTUAL UTILITY PLAN

RIDER AND PATTERSON
BUSINESS CENTER
SWC OF RIDER ST AND PATTERSON AVE

Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

Approved by _____ Date _____
Public Works Director R.C.E. XXXXX

Sheet 4 of 7 Sheets

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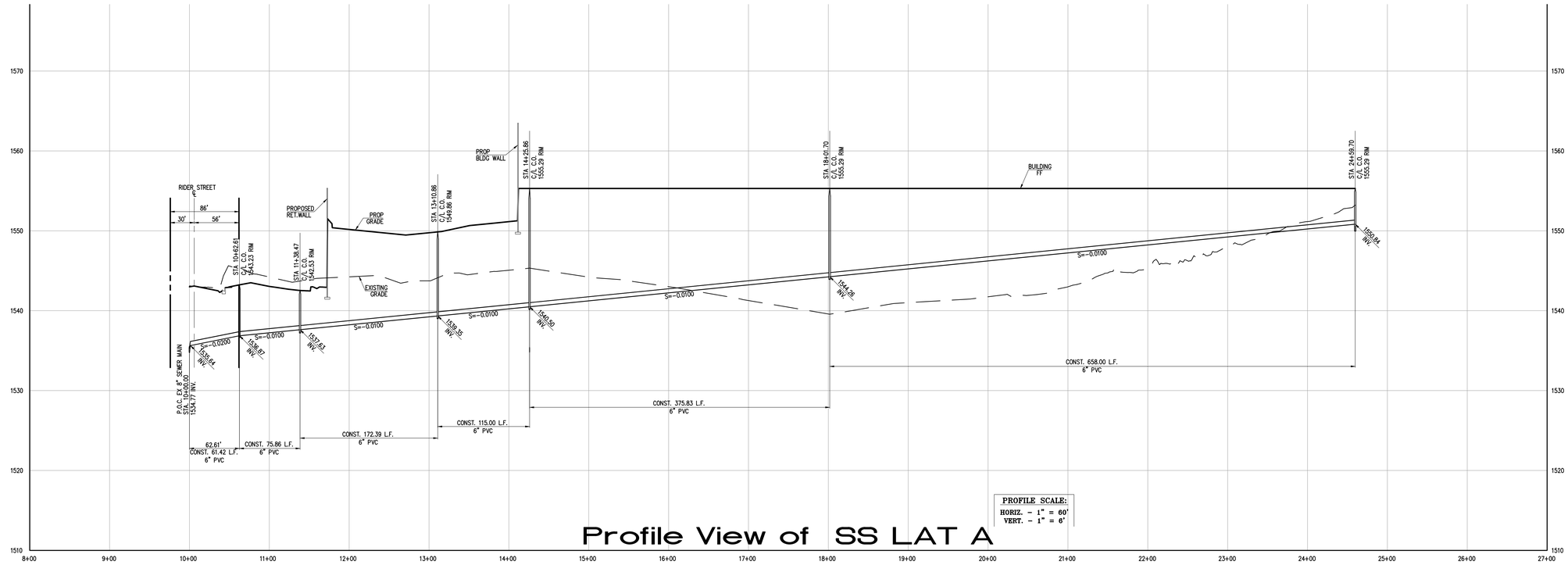

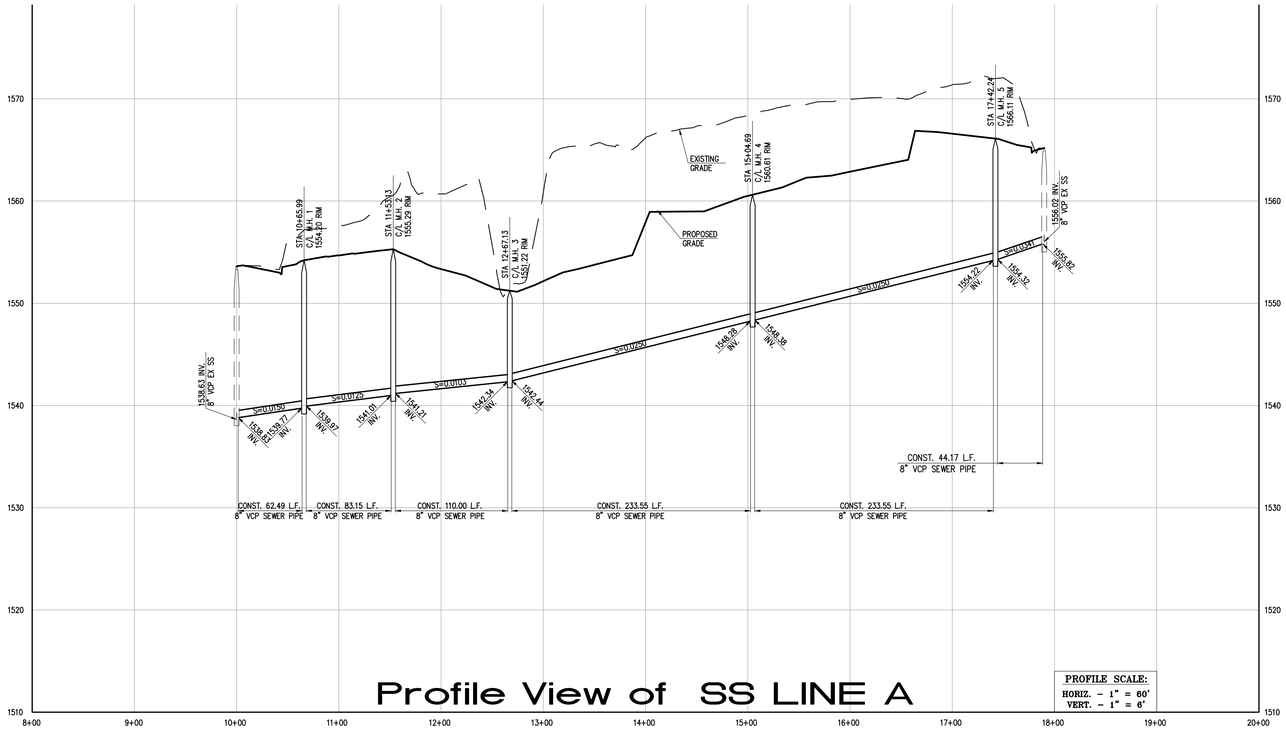

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COUNTY OF RIVESIDE
PUBLIC WORKS DEPARTMENT

CONCEPTUAL SEWER PROFILES

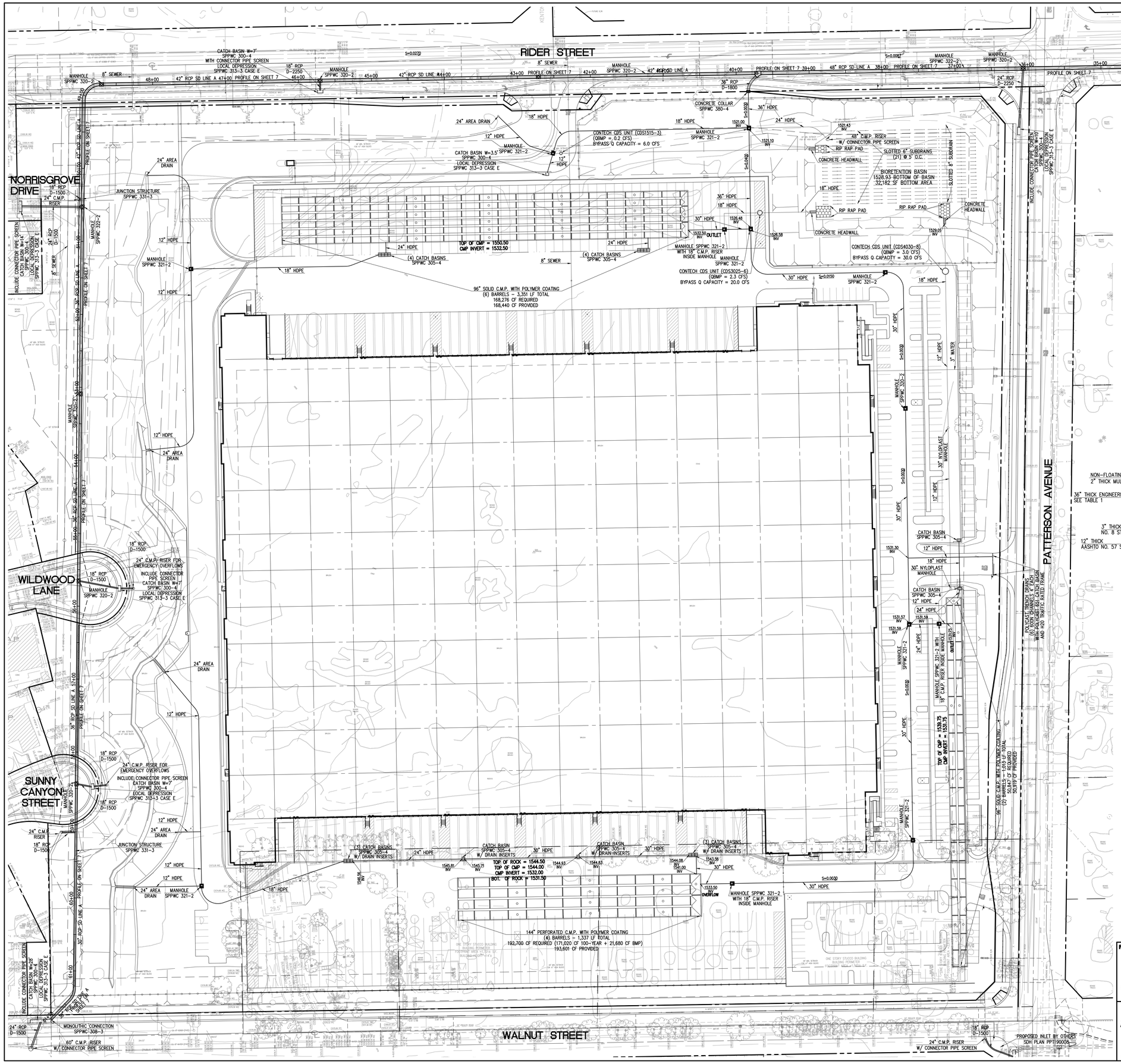
RIDER AND PATTERSON BUSINESS CENTER
SWC OF RIDER ST AND PATTERSON AVE

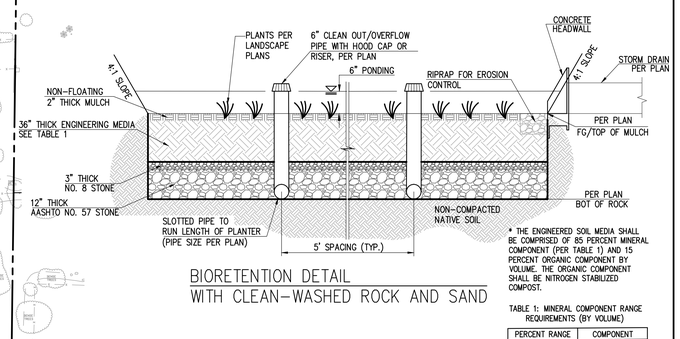
Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

Approved by _____ Date _____
Public Works Director R.C.E. XXXXX

Sheet 5 of 7 Sheets

3958/ 5 OF 7 SHEET





BIORETENTION DETAIL
WITH CLEAN-WASHED ROCK AND SAND

* THE ENGINEERED SOIL MEDIA SHALL BE COMPRISED OF 85 PERCENT MINERAL COMPONENT (PER TABLE 1) AND 15 PERCENT ORGANIC COMPONENT BY VOLUME. THE ORGANIC COMPONENT SHALL BE NITROGEN STABILIZED COMPOST.

TABLE 1: MINERAL COMPONENT RANGE REQUIREMENTS (BY VOLUME)

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

0 25 50 100 150
SCALE: 1"=50'

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Last Update:7/19/22
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COUNTY OF RIVESIDE
PUBLIC WORKS DEPARTMENT

CONCEPTUAL STORM DRAIN PLAN

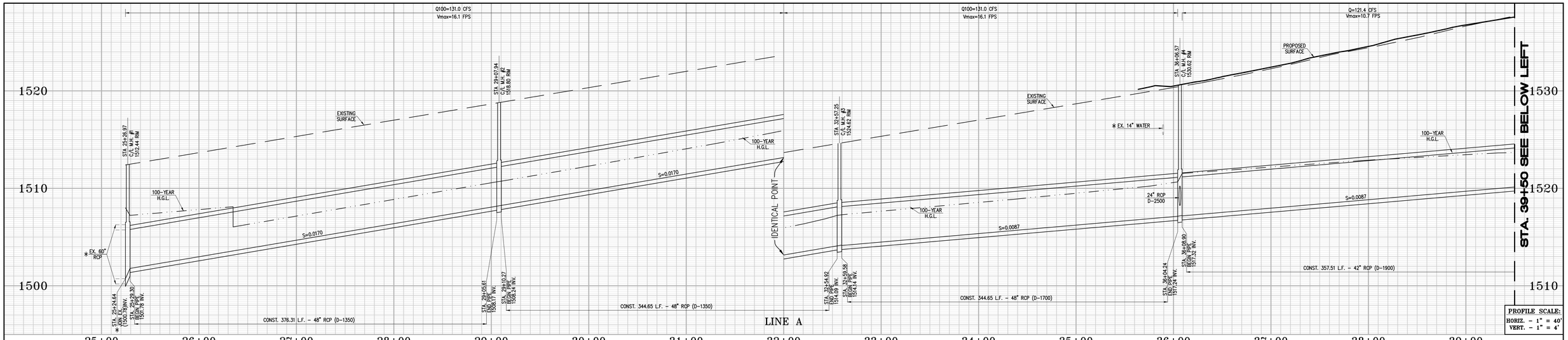
RIDER AND PATTERSON BUSINESS CENTER
SWC OF RIDER ST AND PATTERSON AVE

Designed by
Date
Checked by
Date
Designed by
Date
Checked by
Date

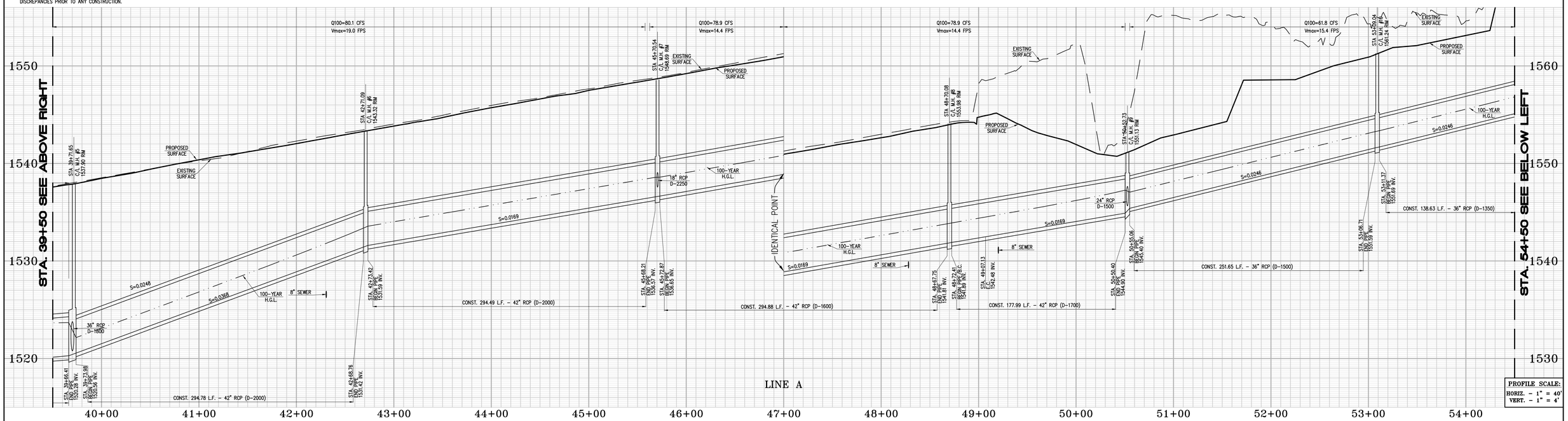
Approved by
Date
Public Works Director
R.C.E. XXXXX

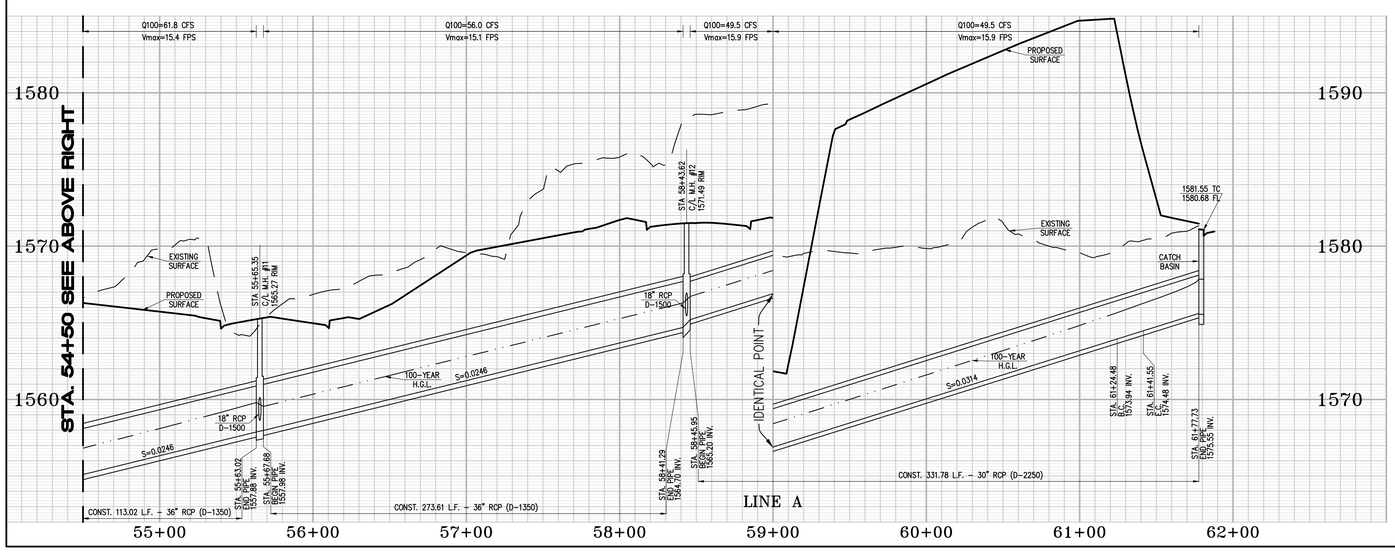
Sheet 6 of 7 Sheets

3958/ 6 OF 7 SHEET



* CONTRACTOR TO VERIFY LOCATION AND INVERT ELEVATIONS OF EXISTING UTILITIES AND DRAINAGE SYSTEMS AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY CONSTRUCTION.





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COUNTY OF RIVESIDE

PUBLIC WORKS DEPARTMENT

CONCEPTUAL STORM DRAIN PROFILES

RIDER AND PATTERSON BUSINESS CENTER
SWC OF RIDER ST AND PATTERSON AVE

Designed by _____ Approved by _____ Date _____
Date _____
Checked by _____
Date _____
Designed by _____ Public Works Director _____ R.C.E. XXXXX
Date _____
Checked by _____
Date _____ Sheet 7 of 7 Sheets

3958/ 7 OF 7 SHEET

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

March 28, 2022

Western Realco
500 Newport Center Drive, Suite 630
Newport Beach, California 92660

Attention: Mr. Jeremy Mape

Project No.: **22G114-2**

Subject: **Results of Infiltration Testing**
Proposed Warehouse
SWC Rider Street and Patterson Avenue
Riverside County, California

Mr. Mape:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Proposal No. 21P513, dated December 16, 2021. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with the guidelines published in Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A, prepared for the Riverside County Department of Environmental Health (RCDEH), dated December, 2013.

Site and Project Description

The subject site is located at the southwest corner of Rider Street and Patterson Avenue in the Perris area of unincorporated Riverside County, California. The site is bounded to the north by Rider Street, to the east by Patterson Avenue, and to the south and west by existing single family residences. The general location of the site is illustrated on the Site Location Map, included as Plate 1 of this report.

The subject site consists of several contiguous rectangular-shaped parcels which total 37.4± acres. The site is presently vacant and undeveloped, with the exception of the southern portion of the site, which is developed with single-family residences. A few stockpiles of soil mixed with cobbles, boulders, concrete fragments, and miscellaneous debris are present in the center and southwest portion of the site. Some small piles of pallets and trash were scattered throughout the central portion of the site. Earthen swales and natural drainage courses are present in the northwestern and western portions of the site. These swales and drainage courses are estimated to be 3 to 6± feet deep and appear to drain toward the north and east. Ground surface cover throughout the site consists of exposed soil with sparse to moderate native grass and weed

growth. Many small to large trees are present in the southern portion of the site, especially near the existing single family residences.

A topographic plan of the site, prepared by Thienes Engineering, was provided to our office by the client. Based on this plan, portions of the central and northern regions of the site are lower in elevation than the surrounding site grades. These areas appear to be approximately 2 to 5± feet lower than the surrounding adjacent streets and properties. Based on our review of historical aerial photographs, which were readily available from the internet, it appears that site topography was flatter and more uniform prior to 2005. It appears that portions of the subject site were used as a borrow area for past off-site grading operations. Slopes with approximate inclinations of 2h:1v descend into these areas from the north and east property lines and from the southern portion of the site. In general, the overall site topography slopes downward to the northeast at a gradient of about 2 to 3± percent, with localized variations including the slopes, swales, and stockpiles noted above. The maximum site elevation is about 1581 feet msl at the southwest property corner and the minimum site elevation is about 1530 feet msl near the northeast property corner.

Proposed Development

The site plan provided to our office by the client indicates that the new development will consist of one (1) warehouse, 583,903± ft^2 in size. The building will be located in the central region of the property. Dock-high doors will be constructed along most of the north and south building walls. The building is expected to be surrounded by asphaltic concrete pavements in the parking and drive areas, Portland cement concrete (PCC) pavements in the truck court area, and limited areas of concrete flatwork and landscaped planters.

Based on a conceptual grading plan, provided by Thienes Engineering, Inc., we understand that the proposed development will include several on-site stormwater infiltration systems. The infiltration systems will consist of there (3) below-grade chamber systems (identified as Infiltration System "A" through "C") located in the northwestern, southeastern, and southern areas of the site, respectively and one (1) basin (identified as Infiltration System "D") located in the northeastern area of the site.

Concurrent Study

SCG concurrently conducted a geotechnical investigation at the subject site. Pertinent details of this study are described below.

> Geotechnical Investigation, Proposed Warehouse, SWC Rider Street and Patterson Avenue, Riverside County (Perris Area), California, prepared for Western Realco, by Southern California Geotechnical, Inc. (SCG), SCG Project No. 22G114-1, dated March 23, 2022.

As part of this study, eleven (11) borings were advanced to depths of 10 to 28½± feet below existing site grades. Younger native alluvium was encountered at the ground surface at borings located within the southern and southeastern portions of the site. Boring Nos. B-17, B-21, and B-23, encountered younger native alluvial soils at the ground surface, extending to depths of 8 to 12± feet below the existing ground surface. The younger alluvium encountered at these boring

locations generally consists of loose to medium dense silty fine to medium sands and silty fine to coarse sands.

Older alluvium was encountered beneath the younger alluvium at Boring No. B-22, and at the ground surface at all of the boring locations, with the exception of Boring No. B-20, which encountered bedrock at the ground surface. The older alluvial soils encountered at the boring locations generally consist of medium dense to dense silty fine to medium sands and fine to medium sandy silts with varying coarse sand content. Some of the older alluvial soils were observed to be weakly cemented. At most of the boring locations, the older alluvial soils extend to depths of 8 to 22± feet and was underlain by weathered bedrock. However, the older alluvial soils extend to at least the maximum depth explored of 30± feet at Boring No. B-22.

Bedrock was encountered at the ground surface at Boring No. B-20, beneath the younger alluvium at Boring Nos. B-17 and B-21, and beneath the older alluvial soils at all of the remaining borings, with the exception of Boring No. B-22 which was terminated at a depth of 30± feet in older alluvium. At the boring locations, bedrock materials were generally encountered between depths of 8 and 27± feet. Generally, the bedrock consists of gray brown to light gray brown, very dense, highly weathered tonalite.

Groundwater

Free water was not encountered during any of our subsurface explorations. Based on the lack of any water within the borings and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 30± feet at the time of the subsurface exploration.

As part of our research, we reviewed readily available groundwater data in order to determine regional groundwater depths. Recent water level data was obtained from the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring well on record is located approximately 1.6± miles east of the site. Water level readings within this monitoring well indicate a high groundwater level of 72± feet (February 2015) below the ground surface.

Previous Studies

Southern California Geotechnical, Inc. (SCG) performed two previous infiltration studies at the site. The most recent of these is referenced as follows:

> Results of Infiltration Testing, Proposed Rider Business Center, SWC Rider Street and Patterson Avenue, Riverside County (Perris Area), California, prepared by SCG, for Core5 Industrial Partners, LLC, SCG Project No. 17G130-2, dated May 23, 2017.

As part of this investigation, six (6) backhoe excavated trenches (identified as I-1 through I-6) were advanced to depths of 6½ to 10± feet below the existing site grades. Native alluvial soils were encountered at the ground surface at Infiltration Trench Nos. I-5 and I-6, extending to at least the maximum depth explored of 10± feet below existing site grades. The alluvium consists of loose to medium dense silty fine to medium sands and silty fine to coarse sands. Native older alluvial soils were encountered at the ground surface at Infiltration Trench Nos. I-1 through I-4,

extending to the maximum depth explored of 7± feet below existing site grades. The older alluvium consists of medium dense to very dense silty fine to medium sands and silty fine to coarse sands with varying amounts of cementation.

Based on the test results at Infiltration Test Nos. I-1 through I-6, SCG recommended an infiltration rate of 2.0 inches per hour for the northeastern basin, a rate of 6.0 inches per hour for the southeastern basin, and no infiltration in the northwestern corner of the site.

SCG also performed infiltration testing at the site in 2016. The results of these tests are presented as follows:

> Results of Infiltration Testing, Proposed Industrial Facility, SWC Rider Street and Patterson Avenue, Unincorporated Riverside County, California, prepared by SCG, for Prologis, SCG Project No. 16G116-2, dated March 14, 2016.

As part of this investigation, four (4) backhoe excavated trenches (identified as Infiltration Nos. I-1 to I-4) were advanced to depths of 5½ to 8½± feet within the areas of proposed infiltration systems. Native alluvial soils were encountered at the ground surface at all four (4) of the infiltration trenches, extending to the maximum depth explored of 8½± feet below existing site grades. The alluvium generally consists of loose to very dense fine to coarse sands and silty fine to coarse sands with varying amounts of medium to coarse sands and silt content.

Based on the test results at Infiltration Test Nos. I-1 through I-4, SCG recommended an infiltration rate of 0.3 inches per hour for the northern region of the site and a rate of 1.7 inches per hour for the southern region of the site.

Subsurface Exploration

Scope of Exploration

The subsurface exploration conducted for the infiltration testing consisted of seven (7) infiltration test borings, advanced to depths ranging from 5½ to 24± feet below the existing site grades. The infiltration borings were advanced using a truck-mounted drilling rig, equipped with 8-inch-diameter hollow stem augers and were logged during drilling by a member of our staff. The approximate locations of the infiltration test borings (identified as I-7 through I-13) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Upon the completion of the infiltration borings, the bottom of each test boring was covered with 2± inches of clean ¾-inch gravel. A sufficient length of 3-inch-diameter perforated PVC casing was then placed into each test hole so that the PVC casing extended from the bottom of the test hole to the ground surface. Clean ¾-inch gravel was then installed in the annulus surrounding the PVC casing.

Geotechnical Conditions

Possible artificial fill soils were encountered at the surface of one infiltration test location, extending to a depth of 3± feet below ground surface. The possible fill soils consist of loose fine to coarse sands with little amounts of silt. These soils resemble the underlying younger alluvium, but also possess some indicators of fill, resulting in their classification as possible fill. Native

younger alluvial soils were encountered beneath the possible fill soils or at the ground surface of most of the infiltration test locations, extending to depths ranging from 3 to 24± feet below the ground surface. The younger alluvial soils encountered generally consists of loose to medium dense sands, silty sands, and sandy silts with varying sand and silt content. Older alluvium was encountered beneath the younger alluvium at most of the infiltration test locations, and at the ground surface at two infiltration test locations. The older alluvial soils encountered at the infiltration boring locations generally consist of medium dense sand, silty sands, and sandy silts with varying sand and silt content. The Boring Logs, which illustrate the conditions encountered at the infiltration test locations, are presented in this report.

Infiltration Testing

The infiltration testing was performed in general accordance with the Riverside County guidelines: Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A.

Pre-soaking

In accordance with the county infiltration standards, all of the infiltration test borings were pre-soaked prior to the infiltration testing. The pre-soaking process consisted of filling the test borings by inverting a full 5-gallon bottle of clear water supported over each hole so that the water level reaches a level of at least 5 times the hole's radius above the gravel at the bottom of each hole. The pre-soaking was completed after all of the water had percolated through each test hole or after 15 hours since initiating the pre-soak.

Infiltration Testing

Following the pre-soaking process, SCG performed the infiltration testing. Each test hole was filled with water to a depth of at least 5 times the hole's radius above the gravel at the bottom of each test hole. In accordance with the Riverside County guidelines, in areas where "non-sandy soils" were encountered at the bottom of the infiltration test borings (where 6 inches of water did not infiltrate into the surrounding soils in less than 25 minutes for two (2) consecutive readings), readings were taken at 30-minute intervals for a total of 6 hours at the test locations. Where "sandy soils" were encountered (where 6 inches of water infiltrated into the surrounding soils for two-consecutive 25-minute readings), readings were taken at 10-minute intervals for a total of 1 hour. The water level readings are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on the spreadsheets.

The infiltration rates from the test are tabulated in inches per hour. In accordance with the typically accepted practice, it is recommended that the most conservative reading from the latter part of the infiltration tests be used as the design infiltration rate. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Test Elevation (msl)	Soil Description	Measured Infiltration Rate (inches/hour)
I-7	15	1550.8	Silty fine to medium Sand, little coarse Sand	0.7
I-8	7½	1543.5	Silty fine to medium Sand, little coarse Sand	0.3
I-9	10½	1539.3	Silty fine to medium Sand, little coarse Sand	0.8
I-10	5½	1534.3	Silty fine to coarse Sand	0.5
I-11	11	1543.5	Silty fine to coarse Sand	0.7
I-12	22	1560.0	Silty fine to coarse Sand	6.1
I-13	24	1561.5	Silty fine to coarse Sand	6.7

Laboratory Testing

Moisture Content

The moisture contents for the recovered soil samples within the borings were determined in accordance with ASTM D-2216 and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Grain Size Analysis

The grain size distribution of selected soils collected from the bottom of each infiltration test boring have been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of these tests are presented on Plates C-1 through C-7 of this report.

Design Recommendations

Seven (7) infiltration tests were performed at the subject site. As noted above, the infiltration rates at these locations vary from 0.3 to 6.7 inches per hour. Based on the results of Infiltration Test Nos. I-7 to I-13, we recommend infiltration rates as follows:

Infiltration System	Infiltration Rate (inches/hour)
A	0.3
B	0.7
C	6.1
D	0.5

The design of the storm water infiltration system should be performed by the project civil engineer, in accordance with the City of Perris and/or County of Riverside guidelines. It is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the systems. The presence of such materials

would decrease the effective infiltration rates. **It is recommended that the project civil engineer apply an appropriate factor of safety. The infiltration rates recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rate.** It should be noted that the recommended infiltration rates are based on infiltration testing at seven (7) discrete locations and that the overall infiltration rates of the proposed infiltration systems could vary considerably.

Infiltration Rate Considerations

The infiltration rates presented herein was determined in accordance with the Riverside County guidelines and are considered valid only for the time and place of the actual test. Varying subsurface conditions will exist in other areas of the site, which could alter the recommended infiltration rates presented above. The infiltration rates will decline over time between maintenance cycles as silt or clay particles accumulate on the BMP surface. The infiltration rate is highly dependent upon a number of factors, including density, silt and clay content, grainsize distribution throughout the range of particle sizes, and particle shape. Small changes in these factors can cause large changes in the infiltration rates.

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. Changes in soil moisture content will affect the infiltration rate. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Compaction of the soils at the bottom of the infiltration system can significantly reduce the infiltration ability of the basins. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each system. It should be confirmed that the soils at the base of the proposed infiltration systems correspond with those presented in this report to ensure that the performance of the systems will be consistent with the rates reported herein.

We recommend that scrapers and other rubber-tired heavy equipment not be operated on the basin bottom, or at levels lower than 2 feet above the bottom of the system, particularly within

basins. As such, the bottom 24 inches of the infiltration systems should be excavated with non-rubber-tired equipment, such as excavators.

Basin Maintenance

The proposed project may include infiltration basins. Water flowing into these basins will carry some level of sediment. Wind-blown sediments and erosion of the basin side walls will also contribute to sediment deposition at the bottom of the basin. This layer has the potential to significantly reduce the infiltration rate of the basin subgrade soils. Therefore, a formal basin maintenance program should be established to ensure that these silt and clay deposits are removed from the basin on a regular basis. Appropriate vegetation on the basin sidewalls and bottom may reduce erosion and sediment deposition.

Basin maintenance should also include measures to prevent animal burrows, and to repair any burrows or damage caused by such. Animal burrows in the basin sidewalls can significantly increase the risk of erosion and piping failures.

Chamber Maintenance

The proposed project may include infiltration chambers. Water flowing into these chambers will carry some level of sediment. This layer has the potential to significantly reduce the infiltration rate of the chamber subgrade soils. Therefore, a formal chamber maintenance program should be established to ensure that these silt and clay deposits are removed from the chamber on a regular basis.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration area could potentially be damaged due to saturation of the subgrade soils. **The proposed infiltration systems for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration system at least 25 feet from the building(s), it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

The infiltration system designer should also give special consideration to the effect that the proposed infiltration systems may have on nearby subterranean structures, open excavations, or descending slopes. In particular, infiltration systems should not be located near the crest of descending slopes, particularly where the slopes are comprised of granular soils. Such systems will require specialized design and analysis to evaluate the potential for slope instability, piping failures and other phenomena that typically apply to earthen dam design. This type of analysis is beyond the scope of this infiltration test report, but these factors should be considered by the infiltration system designer when locating the infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the proposed storm water infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rate contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the proposed storm water infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

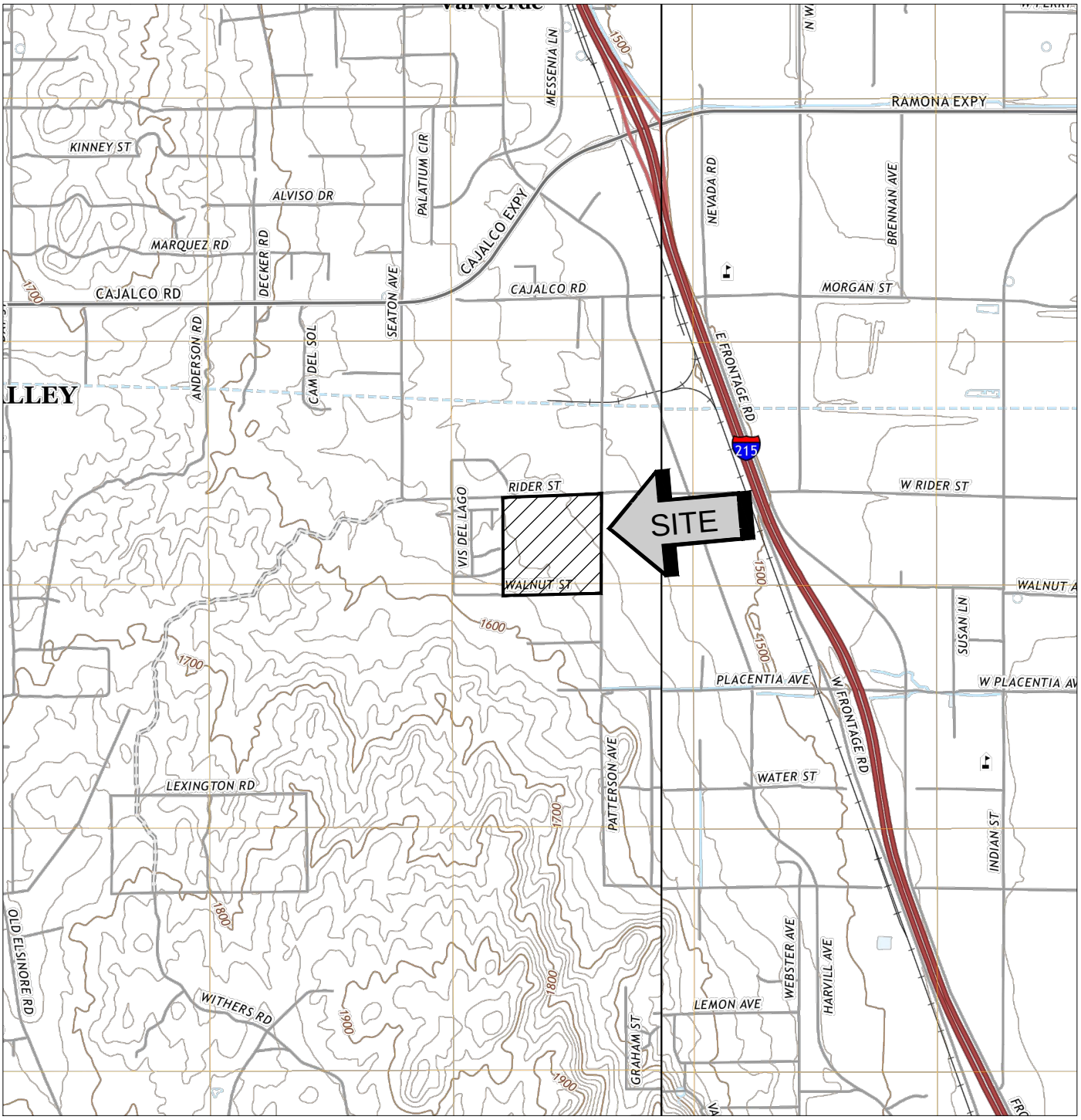
SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Oscar Sandoval
Staff Engineer

Gregory K. Mitchell, GE 2364
Principal Engineer

Distribution: (1) Addressee

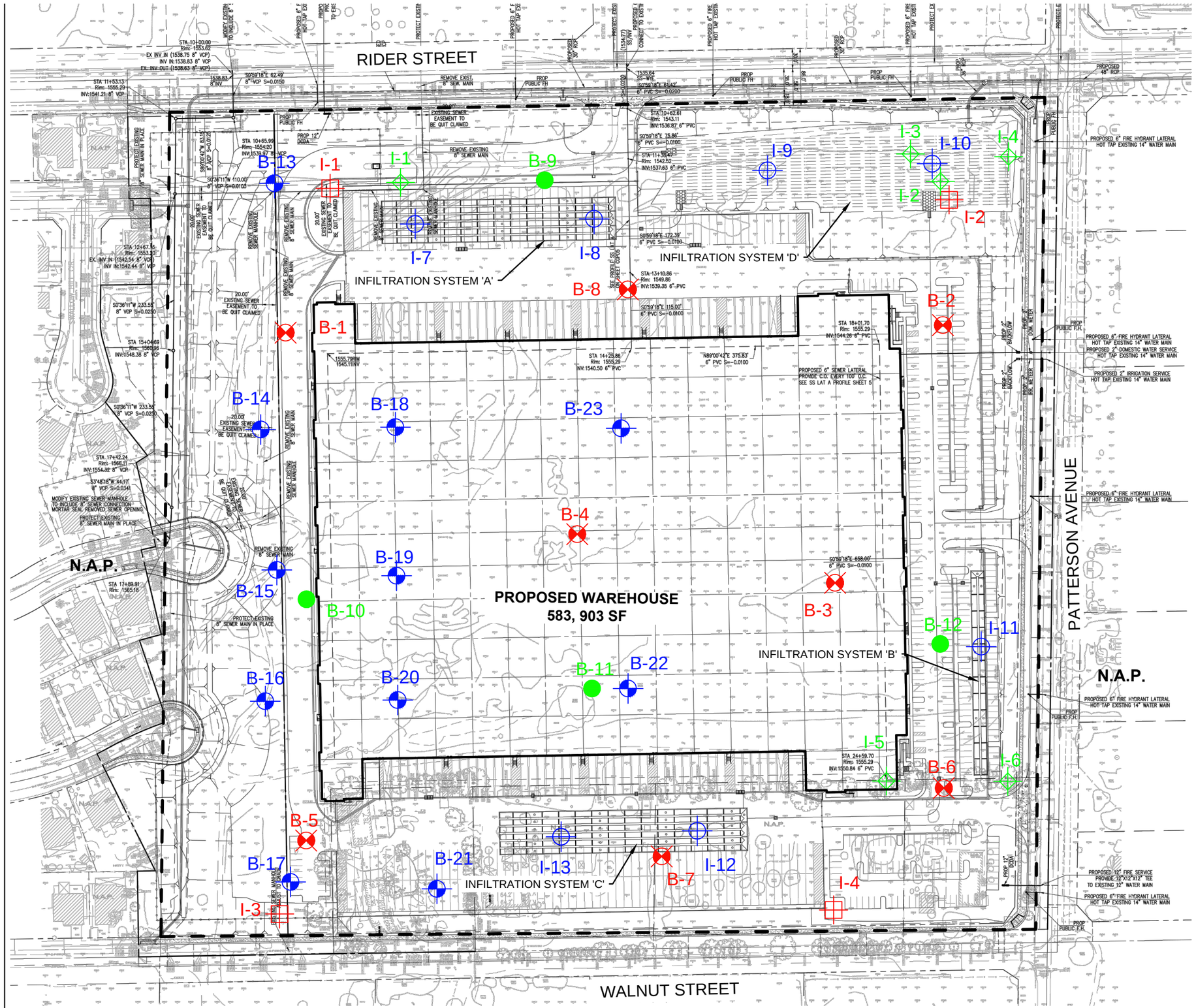
Enclosures: Plate 1 - Site Location Map
Plate 2 - Infiltration Test Location Plan
Boring Log Legend and Logs (9 pages)
Infiltration Test Results Spreadsheets (7 pages)
Grainsize Distribution Graphs (7 pages)



SOURCE: USGS TOPOGRAPHIC MAP OF THE STEELE PEAK & PERRIS QUADRANGLES, RIVERSIDE COUNTY, CALIFORNIA, 2021.

SITE LOCATION MAP
PROPOSED WAREHOUSE
RIVERSIDE COUNTY, CALIFORNIA
SCALE: 1" = 2000'
DRAWN: MD CHKD: DN
SCG PROJECT 22G114-2
PLATE 1

SOUTHERN CALIFORNIA GEOTECHNICAL



NORTH
SoCalGeo

GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION
- PREVIOUS INFILTRATION TEST LOCATION (PROJECT NO. 16G116-2)
- PREVIOUS INFILTRATION TEST LOCATION (PROJECT NO. 17G130-2)
- PREVIOUS BORING LOCATION (SCG PROJECT NO. 16G116-1)
- PREVIOUS BORING LOCATION (SCG PROJECT NO. 17G130-1)
- PROPOSED WAREHOUSE OUTLINE
- PROPERTY LINE

NOTE: CONCEPTUAL SITE PLAN PREPARED BY THIENES ENGINEERING. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH.

INFILTRATION TEST LOCATION PLAN

PROPOSED WAREHOUSE

RIVERSIDE COUNTY, CALIFORNIA

SCALE: 1" = 150'	SOUTHERN CALIFORNIA GEOTECHNICAL
DRAWN: OS CHKD: GKM	
SCG PROJECT 22G114-2	
PLATE 2	

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-7

JOB NO.: 22G114-2
PROJECT: Proposed Warehouse
LOCATION: Riverside County, California

DRILLING DATE: 2/9/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
	X	8			YOUNGER ALLUVIUM: Brown Silty fine to coarse Sand, micaceous, loose-moist to very moist		11					
	X	20			OLDER ALLUVIUM: Brown fine to medium Sand, trace coarse Sand, trace Silt, medium dense-damp		7					
5												
	X	23			Brown fine to medium Sandy Silt, trace coarse Sand, medium dense-damp to moist		7					
	X	21			Brown fine to medium Sand, trace coarse Sand, trace Silt, medium dense-damp		4					
10												
	X	27			Brown Silty fine to medium Sand, little coarse Sand, medium dense-damp		6			32		
15												
					Boring Terminated at 15'							

TBL 22G114-2.GPJ SOCALGEO.GDT 3/23/22

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-8

JOB NO.: 22G114-2
PROJECT: Proposed Warehouse
LOCATION: Riverside County, California

DRILLING DATE: 2/9/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
	X	28			OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, micaceous, medium dense-damp to moist		8					
	X	22					5					
5												
	X	17			@ 6 feet, little Calcareous veining		6			36		
					Boring Terminated at 7½'							

TBL 22G114-2.GPJ SOCALGEO.GDT 3/23/22

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 22G114-2
PROJECT: Proposed Warehouse
LOCATION: Riverside County, California

DRILLING DATE: 2/9/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, medium dense-damp to moist							
	X	14					7					
5	X	17					6					
	X	15					5					
10	X	22					6			36		
					Boring Terminated at 10½'							

TBL 22G114-2.GPJ SOCALGEO.GDT 3/23/22

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-10

JOB NO.: 22G114-2
PROJECT: Proposed Warehouse
LOCATION: Riverside County, California

DRILLING DATE: 2/9/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					YOUNGER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, micaceous, loose-moist							
	X	9					12					
					OLDER ALLUVIUM: Brown Silty fine to coarse Sand, medium dense-damp							
5	X	23					6			20		
					Boring Terminated at 5½'							

TBL 22G114-2.GPJ SOCALGEO.GDT 3/23/22

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-11

JOB NO.: 22G114-2
PROJECT: Proposed Warehouse
LOCATION: Riverside County, California

DRILLING DATE: 2/9/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
	X	9			YOUNGER ALLUVIUM: Brown Silty fine to medium Sand to fine to medium Sandy Silt, trace coarse Sand, loose-damp to moist		5					
	X	8					3					
5												
	X	7					7					
					Brown Silty fine to coarse Sand, micaceous, loose-damp							
10	X	7					5			24		
					Boring Terminated at 11'							

TBL 22G114-2.GPJ SOCALGEO.GDT 3/23/22

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-12

JOB NO.: 22G114-2
PROJECT: Proposed Warehouse
LOCATION: Riverside County, California

DRILLING DATE: 2/9/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
	X	14			YOUNGER ALLUVIUM: Brown fine to medium Sand, little coarse Sand, medium dense-damp		4					
	X	16					3					
5												
	X	13			Brown fine to medium Sandy Silt, trace coarse Sand, medium dense-damp		4					
	X	15			Brown Silty fine to coarse Sand, medium dense-dry to damp		3					
10												
	X	12					3					
15												
20												
	X	13					2			15		
					Boring Terminated at 22'							

TBL 22G114-2.GPJ SOCALGEO.GDT 3/23/22

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-13

JOB NO.: 22G114-2
PROJECT: Proposed Warehouse
LOCATION: Riverside County, California

DRILLING DATE: 2/9/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: ---
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
	X	7			POSSIBLE FILL: Brown fine to coarse Sand, trace Silt, micaceous, loose-damp to moist		7					
	X	7			YOUNGER ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, loose-dry to damp		3					
5	X	6					2					
	X	6					3					
10					Brown Silty fine to coarse Sand, micaceous, loose-damp							
	X	5					3					
15												
20												
	X	13					4			12		
					Boring Terminated at 24'							

TBL 22G114-2.GPJ SOCALGEO.GDT 3/23/22

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Riverside County, CA
Project Number	22G114-2
Engineer	OS

Test Hole Radius	4	(in)
Test Depth	14.70	(ft)

Infiltration Test Hole	I-7

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	7:52 AM	25.00	13.00	4.20	NO	NON-SANDY SOILS
	Final	8:17 AM		13.35			
2	Initial	8:17 AM	25.00	13.00	4.80	NO	NON-SANDY SOILS
	Final	8:42 AM		13.40			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	8:42 AM	30.00	13.00	0.47	1.47	1.15
	Final	9:12 AM		13.47			
2	Initial	9:12 AM	30.00	13.00	0.47	1.47	1.15
	Final	9:42 AM		13.47			
3	Initial	9:42 AM	30.00	13.00	0.45	1.48	1.10
	Final	10:12 AM		13.45			
4	Initial	10:12 AM	30.00	13.00	0.45	1.48	1.10
	Final	10:42 AM		13.45			
5	Initial	10:42 AM	30.00	13.00	0.40	1.50	0.96
	Final	11:12 AM		13.40			
6	Initial	11:12 AM	30.00	13.00	0.35	1.53	0.83
	Final	11:42 AM		13.35			
7	Initial	11:42 AM	30.00	13.00	0.35	1.53	0.83
	Final	12:12 PM		13.35			
8	Initial	12:12 PM	30.00	13.00	0.32	1.54	0.75
	Final	12:42 PM		13.32			
9	Initial	12:42 PM	30.00	13.00	0.31	1.55	0.72
	Final	1:12 PM		13.31			
10	Initial	1:12 PM	30.00	13.00	0.30	1.55	0.70
	Final	1:42 PM		13.30			
11	Initial	1:42 PM	30.00	13.00	0.30	1.55	0.70
	Final	2:12 PM		13.30			
12	Initial	2:12 PM	30.00	13.00	0.30	1.55	0.70
	Final	2:42 PM		13.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Riverside County, CA
Project Number	22G114-2
Engineer	OS

Test Hole Radius	4	(in)
Test Depth	7.60	(ft)

Infiltration Test Hole	I-8

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:30 AM	25.00	3.70	3.60	NO	NON-SANDY SOILS
	Final	9:55 AM		4.00			
2	Initial	9:55 AM	25.00	3.70	3.60	NO	NON-SANDY SOILS
	Final	10:20 AM		4.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:20 AM	30.00	3.70	0.30	3.75	0.31
	Final	10:50 AM		4.00			
2	Initial	10:50 AM	30.00	3.70	0.30	3.75	0.31
	Final	11:20 AM		4.00			
3	Initial	11:20 AM	30.00	3.70	0.30	3.75	0.31
	Final	11:50 AM		4.00			
4	Initial	11:50 AM	30.00	3.70	0.30	3.75	0.31
	Final	12:20 PM		4.00			
5	Initial	12:20 PM	30.00	3.70	0.29	3.76	0.30
	Final	12:50 PM		3.99			
6	Initial	12:50 PM	30.00	3.70	0.29	3.76	0.30
	Final	1:20 PM		3.99			
7	Initial	1:20 PM	30.00	3.70	0.28	3.76	0.29
	Final	1:50 PM		3.98			
8	Initial	1:50 PM	30.00	3.70	0.28	3.76	0.29
	Final	2:20 PM		3.98			
9	Initial	2:20 PM	30.00	3.70	0.27	3.77	0.27
	Final	2:50 PM		3.97			
10	Initial	2:50 PM	30.00	3.70	0.27	3.77	0.27
	Final	3:20 PM		3.97			
11	Initial	3:20 PM	30.00	3.70	0.27	3.77	0.27
	Final	3:50 PM		3.97			
12	Initial	3:50 PM	30.00	3.70	0.27	3.77	0.27
	Final	4:20 PM		3.97			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Riverside County, CA
Project Number	22G114-2
Engineer	OS

Test Hole Radius	4	(in)
Test Depth	10.10	(ft)

Infiltration Test Hole	I-9

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:00 AM	25.00	8.00	6.60	YES	SANDY SOILS
	Final	10:25 AM		8.55			
2	Initial	10:25 AM	25.00	8.00	5.40	NO	NON-SANDY SOILS
	Final	10:50 AM		8.45			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:50 AM	30.00	8.00	0.45	1.88	0.88
	Final	11:20 AM		8.45			
2	Initial	11:20 AM	30.00	8.00	0.45	1.88	0.88
	Final	11:50 AM		8.45			
3	Initial	11:50 AM	30.00	8.00	0.42	1.89	0.82
	Final	12:20 PM		8.42			
4	Initial	12:20 PM	30.00	8.00	0.40	1.90	0.77
	Final	12:50 PM		8.40			
5	Initial	12:50 PM	30.00	8.00	0.40	1.90	0.77
	Final	1:20 PM		8.40			
6	Initial	1:20 PM	30.00	8.00	0.40	1.90	0.77
	Final	1:50 PM		8.40			
7	Initial	1:50 PM	30.00	8.00	0.40	1.90	0.77
	Final	2:20 PM		8.40			
8	Initial	2:20 PM	30.00	8.00	0.39	1.91	0.75
	Final	2:50 PM		8.39			
9	Initial	2:50 PM	30.00	8.00	0.39	1.91	0.75
	Final	3:20 PM		8.39			
10	Initial	3:20 PM	30.00	8.00	0.39	1.91	0.75
	Final	3:50 PM		8.39			
11	Initial	3:50 PM	30.00	8.00	0.39	1.91	0.75
	Final	4:20 PM		8.39			
12	Initial	4:20 PM	30.00	8.00	0.39	1.91	0.75
	Final	4:50 PM		8.39			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Riverside County, CA
Project Number	22G114-2
Engineer	OS

Test Hole Radius	4	(in)
Test Depth	5.10	(ft)

Infiltration Test Hole	I-10

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:37 AM	25.00	3.60	6.00	NO	NON-SANDY SOILS
	Final	12:02 PM		4.10			
2	Initial	12:02 PM	25.00	3.60	4.80	NO	NON-SANDY SOILS
	Final	12:27 PM		4.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:27 PM	30.00	3.60	0.27	1.37	0.71
	Final	12:57 PM		3.87			
2	Initial	12:57 PM	30.00	3.60	0.27	1.37	0.71
	Final	1:27 PM		3.87			
3	Initial	1:27 PM	30.00	3.60	0.27	1.37	0.71
	Final	1:57 PM		3.87			
4	Initial	1:57 PM	30.00	3.60	0.25	1.38	0.65
	Final	2:27 PM		3.85			
5	Initial	2:27 PM	30.00	3.60	0.25	1.38	0.65
	Final	2:57 PM		3.85			
6	Initial	2:57 PM	30.00	3.60	0.22	1.39	0.57
	Final	3:27 PM		3.82			
7	Initial	3:27 PM	30.00	3.60	0.22	1.39	0.57
	Final	3:57 PM		3.82			
8	Initial	3:57 PM	30.00	3.60	0.20	1.40	0.51
	Final	4:27 PM		3.80			
9	Initial	4:27 PM	30.00	3.60	0.20	1.40	0.51
	Final	4:57 PM		3.80			
10	Initial	4:57 PM	30.00	3.60	0.19	1.41	0.48
	Final	5:27 PM		3.79			
11	Initial	5:27 PM	30.00	3.60	0.19	1.41	0.48
	Final	5:57 PM		3.79			
12	Initial	5:57 PM	30.00	3.60	0.19	1.41	0.48
	Final	6:27 PM		3.79			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Riverside County, CA
Project Number	22G114-2
Engineer	OS

Test Hole Radius	4	(in)
Test Depth	10.80	(ft)

Infiltration Test Hole	I-11

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:00 AM	25.00	8.80	4.80	NO	NON-SANDY SOILS
	Final	9:25 AM		9.20			
2	Initial	9:25 AM	25.00	8.80	4.80	NO	NON-SANDY SOILS
	Final	9:50 AM		9.20			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:50 AM	30.00	8.80	0.41	1.80	0.84
	Final	10:20 AM		9.21			
2	Initial	10:20 AM	30.00	8.80	0.40	1.80	0.81
	Final	10:50 AM		9.20			
3	Initial	10:50 AM	30.00	8.80	0.40	1.80	0.81
	Final	11:20 AM		9.20			
4	Initial	11:20 AM	30.00	8.80	0.40	1.80	0.81
	Final	11:50 AM		9.20			
5	Initial	11:50 AM	30.00	8.80	0.40	1.80	0.81
	Final	12:20 PM		9.20			
6	Initial	12:20 PM	30.00	8.80	0.40	1.80	0.81
	Final	12:50 PM		9.20			
7	Initial	12:50 PM	30.00	8.80	0.40	1.80	0.81
	Final	1:20 PM		9.20			
8	Initial	1:20 PM	30.00	8.80	0.35	1.83	0.70
	Final	1:50 PM		9.15			
9	Initial	1:50 PM	30.00	8.80	0.35	1.83	0.70
	Final	2:20 PM		9.15			
10	Initial	2:20 PM	30.00	8.80	0.35	1.83	0.70
	Final	2:50 PM		9.15			
11	Initial	2:50 PM	30.00	8.80	0.35	1.83	0.70
	Final	3:20 PM		9.15			
12	Initial	3:20 PM	30.00	8.80	0.35	1.83	0.70
	Final	3:50 PM		9.15			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Riverside County, CA
Project Number	22G114-2
Engineer	OS

Test Hole Radius	4	(in)
Test Depth	21.65	(ft)

Infiltration Test Hole	I-12

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:17 AM	25.00	19.80	24.00	YES	SANDY SOILS
	Final	8:42 AM		21.80			
2	Initial	8:42 AM	25.00	19.80	22.80	YES	SANDY SOILS
	Final	9:07 AM		21.70			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:07 AM	10.00	19.80	0.95	1.38	7.39
	Final	9:17 AM		20.75			
2	Initial	9:17 AM	10.00	19.80	0.90	1.40	6.89
	Final	9:27 AM		20.70			
3	Initial	9:27 AM	10.00	19.80	0.85	1.43	6.41
	Final	9:37 AM		20.65			
4	Initial	9:37 AM	10.00	19.80	0.85	1.43	6.41
	Final	9:47 AM		20.65			
5	Initial	9:47 AM	10.00	19.80	0.82	1.44	6.12
	Final	9:57 AM		20.62			
6	Initial	9:57 AM	10.00	19.80	0.82	1.44	6.12
	Final	10:07 AM		20.62			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Riverside County, CA
Project Number	22G114-2
Engineer	OS

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole	I-13

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:41 AM	25.00	22.20	31.20	YES	SANDY SOILS
	Final	11:06 AM		24.80			
2	Initial	11:06 AM	25.00	22.20	30.60	YES	SANDY SOILS
	Final	11:31 AM		24.75			

Test Data

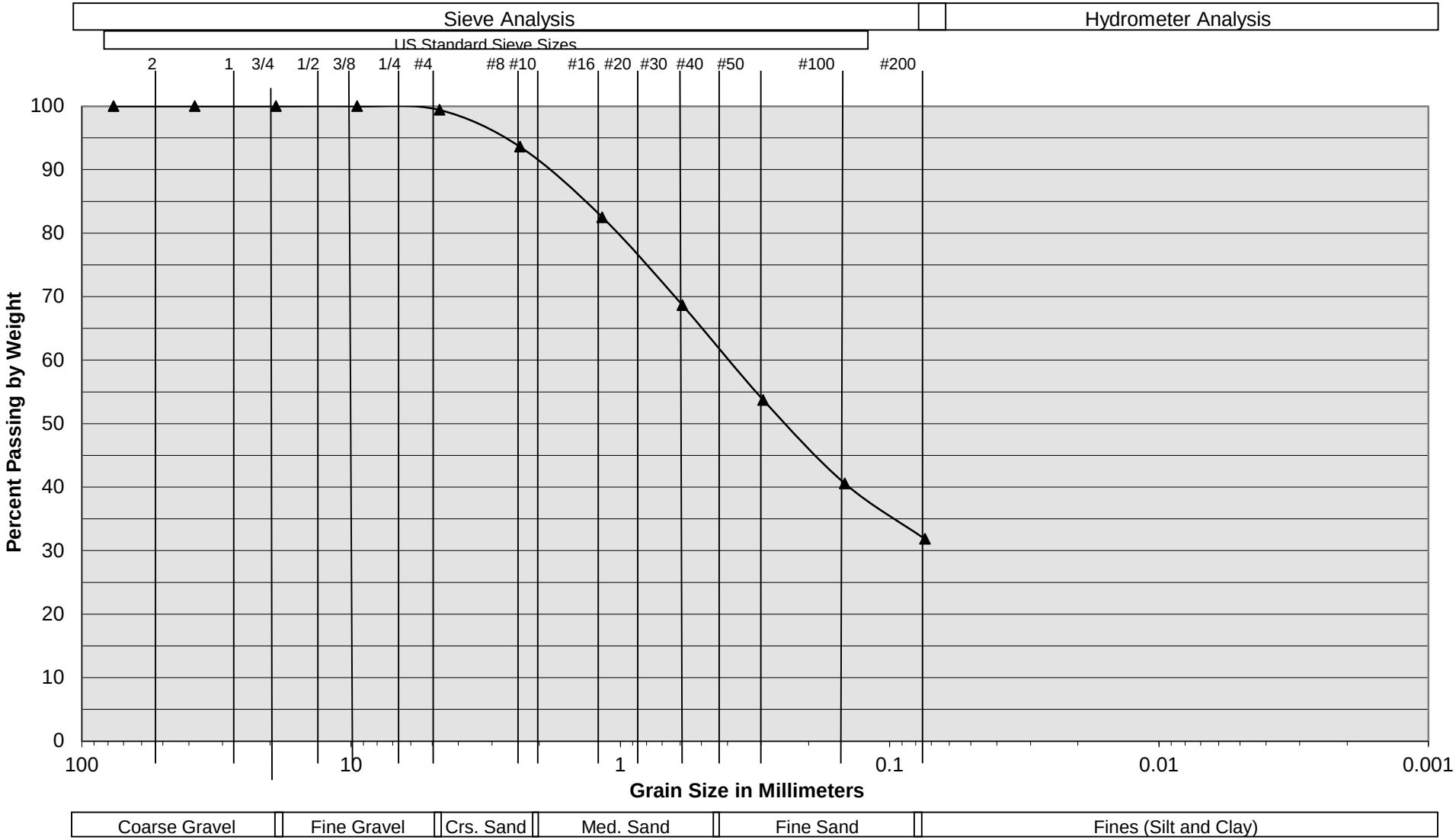
Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:31 AM	10.00	22.20	1.40	2.10	7.41
	Final	11:41 AM		23.60			
2	Initial	11:41 AM	10.00	22.20	1.30	2.15	6.73
	Final	11:51 AM		23.50			
3	Initial	11:51 AM	10.00	22.20	1.33	2.14	6.93
	Final	12:01 PM		23.53			
4	Initial	12:01 PM	10.00	22.20	1.31	2.15	6.80
	Final	12:11 PM		23.51			
5	Initial	12:11 PM	10.00	22.20	1.30	2.15	6.73
	Final	12:21 PM		23.50			
6	Initial	12:21 PM	10.00	22.20	1.30	2.15	6.73
	Final	12:31 PM		23.50			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

Grain Size Distribution



Sample Description	I-7 @ 13½ to 15'
Soil Classification	Brown Silty fine to medium Sand, little coarse Sand

Proposed Warehouse
Riverside County, California
Project No. 22G114-2
PLATE C- 1

SOUTHERN CALIFORNIA GEOTECHNICAL
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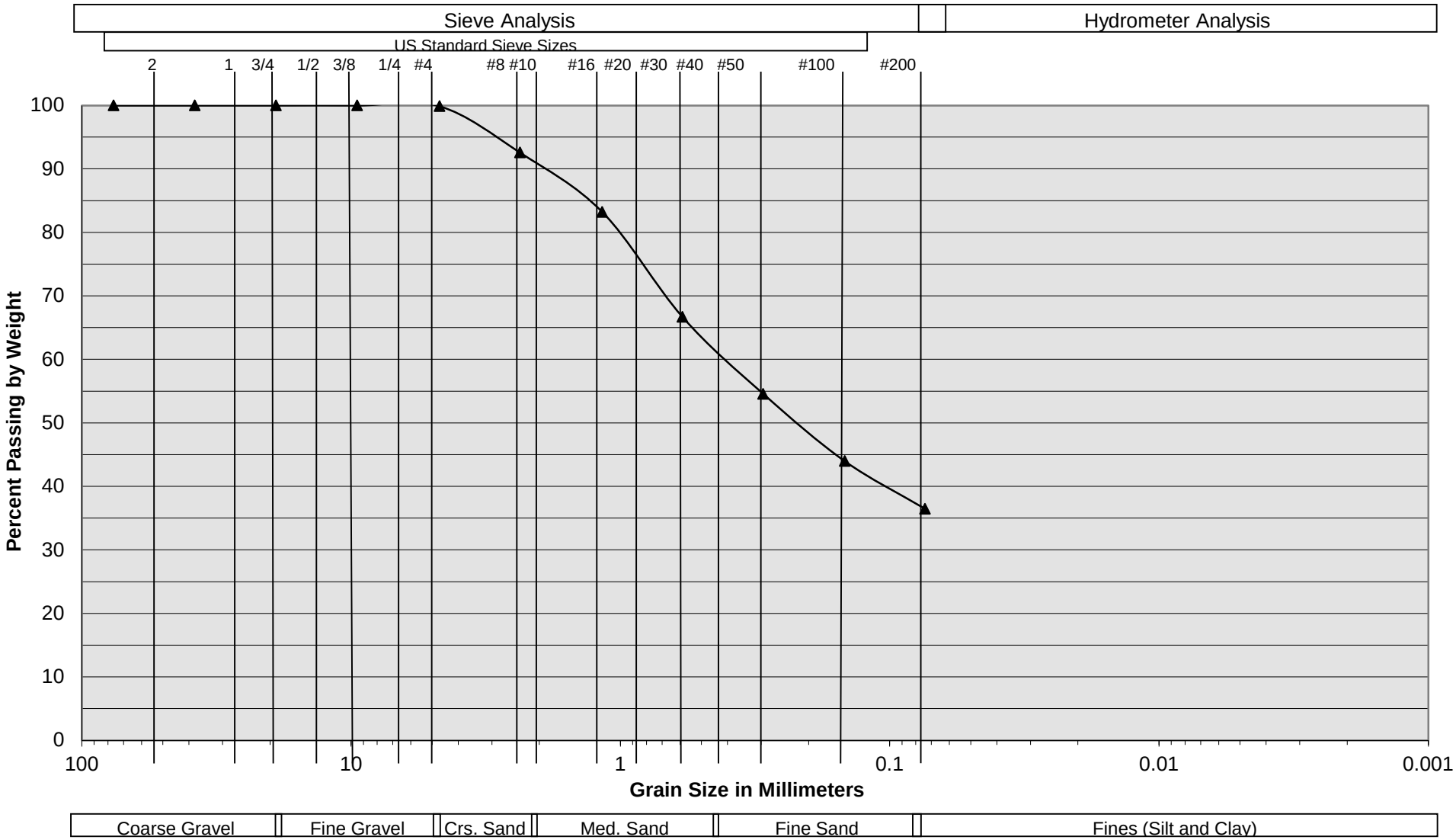
Grain Size Distribution

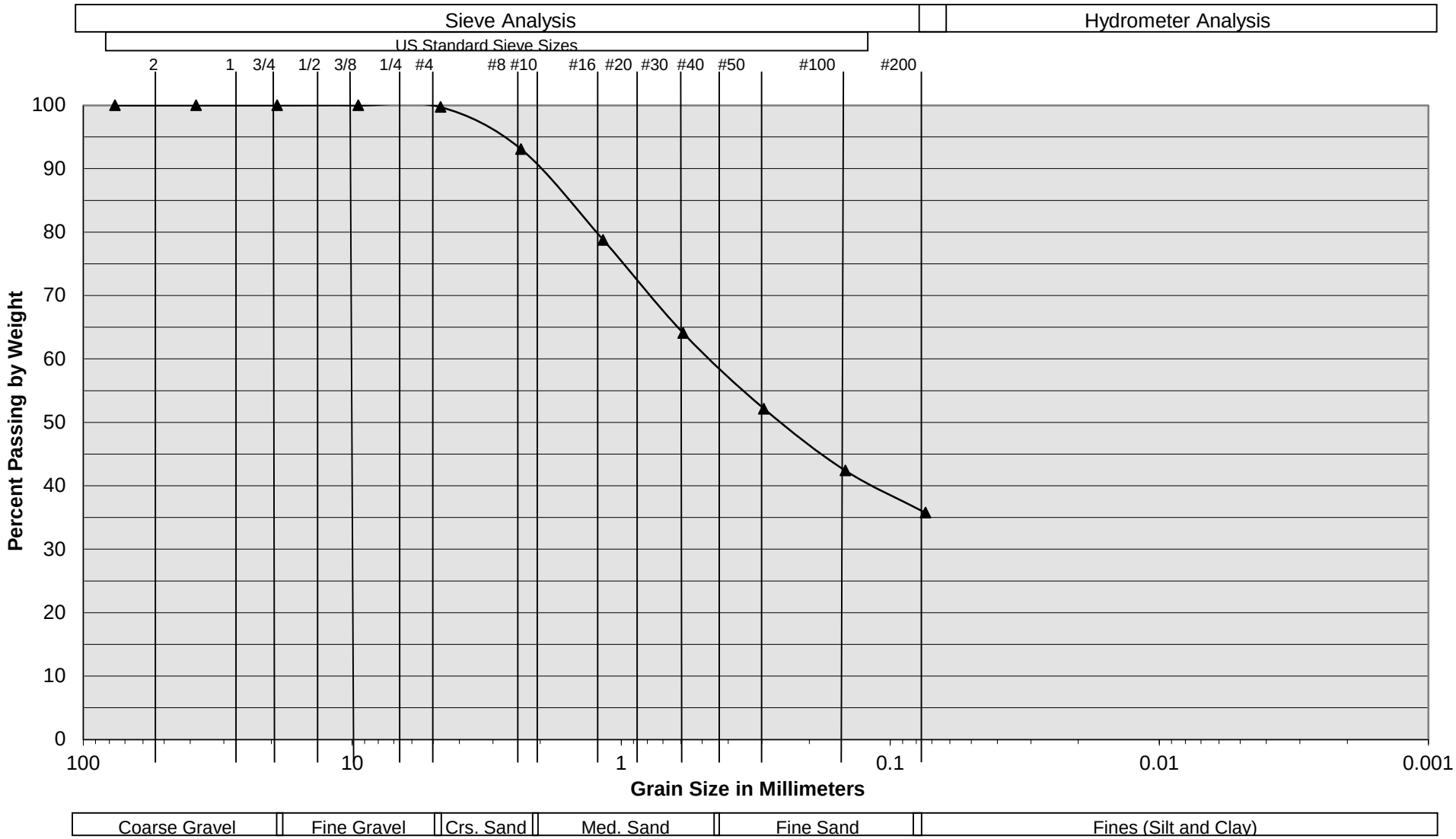


Sample Description	I-8 @ 6 to 7½'
Soil Classification	Brown Silty fine to medium Sand, little coarse Sand

Proposed Warehouse
Riverside County, California
Project No. 22G114-2
PLATE C- 2

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

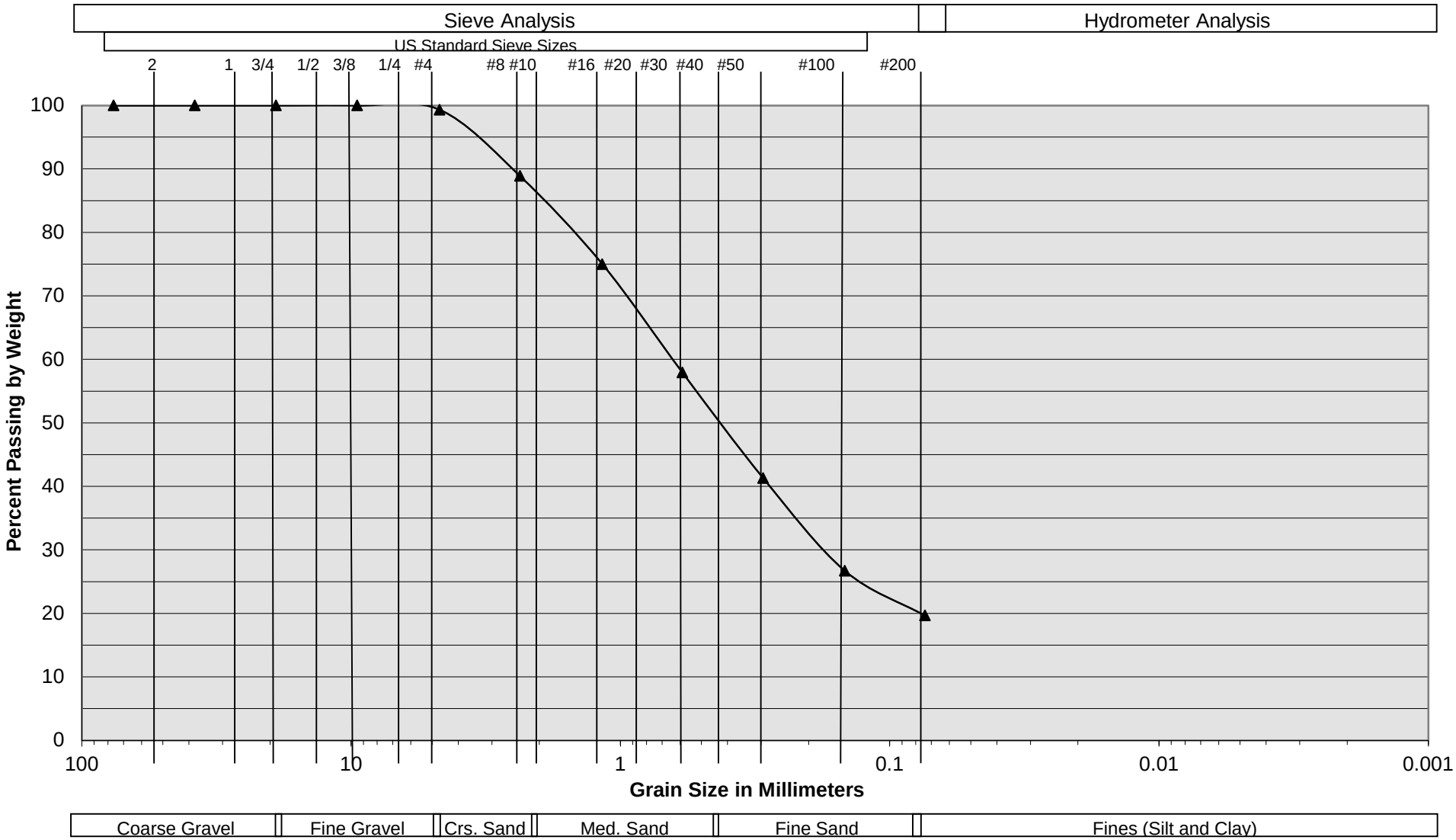


Sample Description	I-9 @ 9 to 10½'
Soil Classification	Brown Silty fine to medium Sand, little coarse Sand

Proposed Warehouse
Riverside County, California
Project No. 22G114-2
PLATE C- 3

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

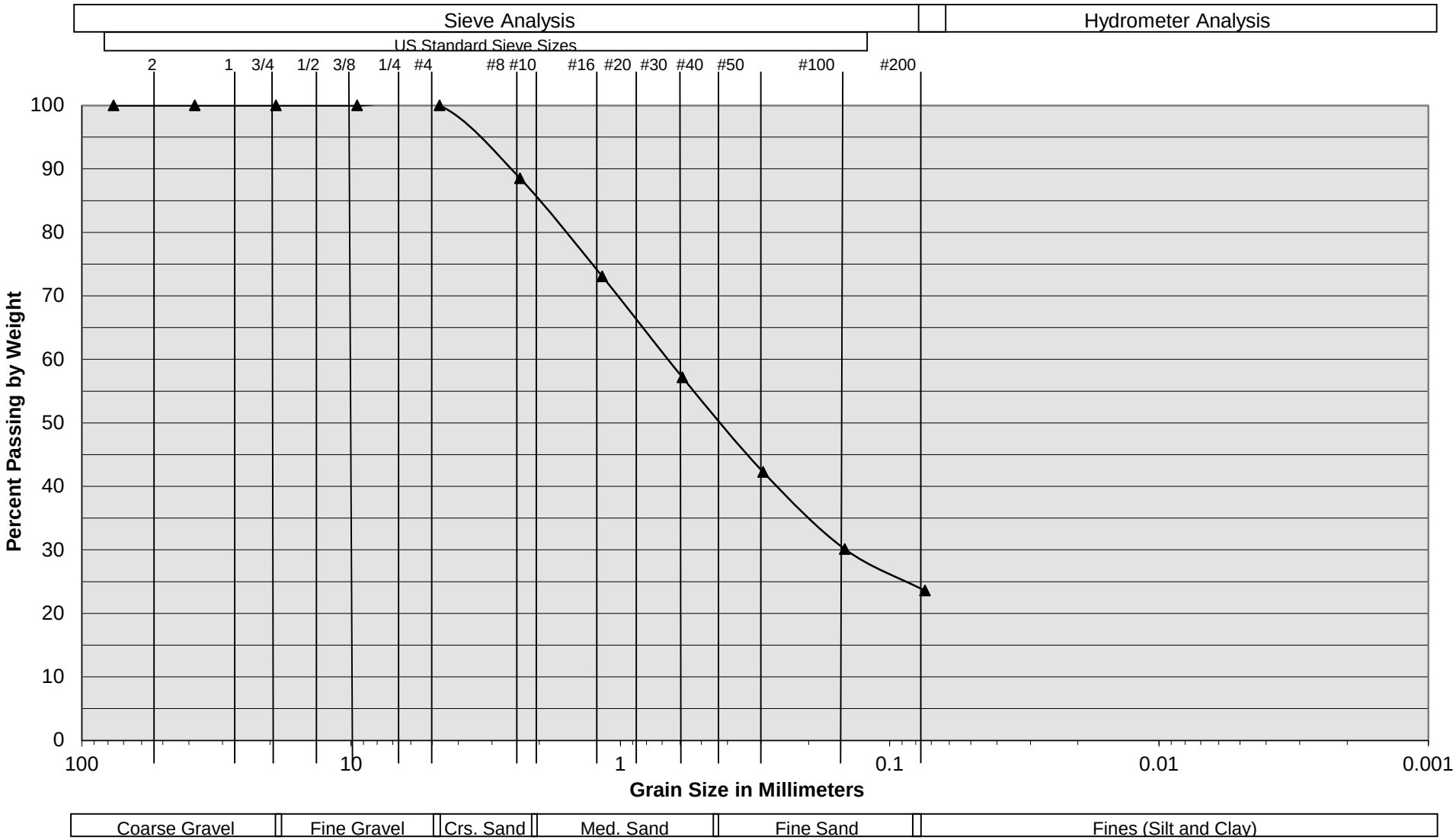


Sample Description	I-10 @ 4 to 5½'
Soil Classification	Brown Silty fine to coarse Sand

Proposed Warehouse
Riverside County, California
Project No. 22G114-2
PLATE C- 4

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

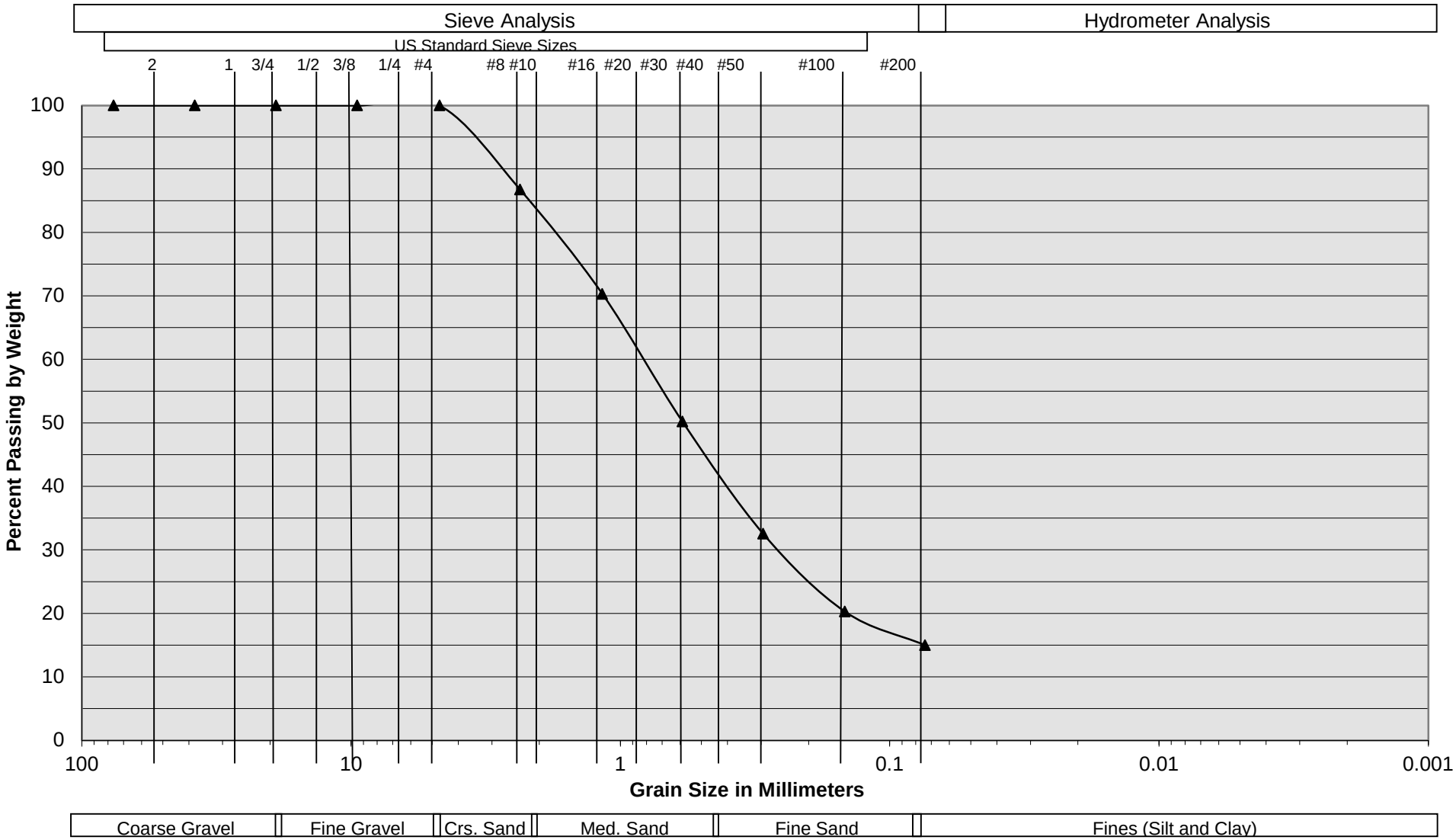


Sample Description	I-11 @ 9½ to 11'
Soil Classification	Brown Silty fine to coarse Sand

Proposed Warehouse
Riverside County, California
Project No. 22G114-2
PLATE C- 5

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

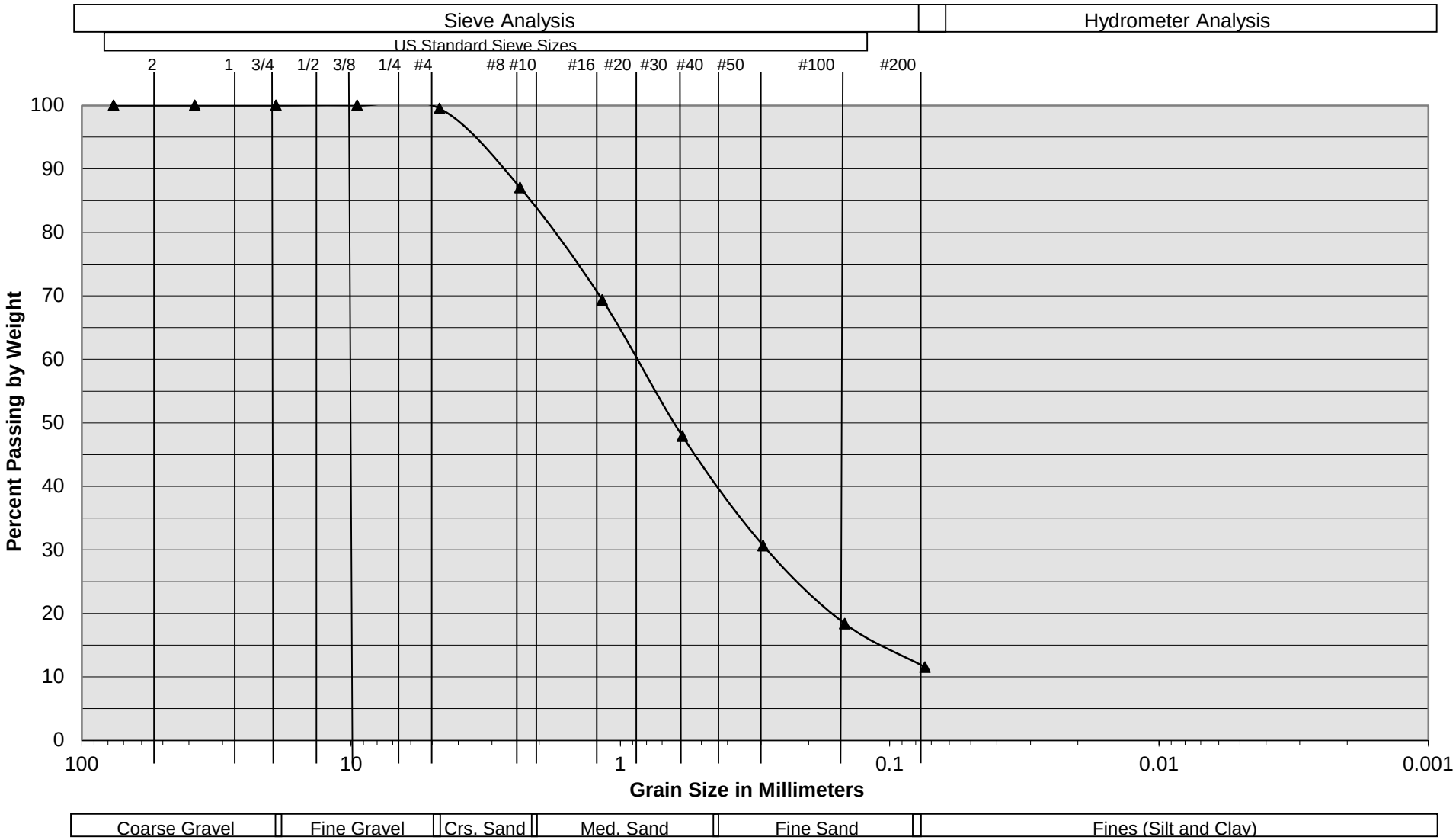


Sample Description	I-12 @ 20½ to 22'
Soil Classification	Brown Silty fine to coarse Sand

Proposed Warehouse
Riverside County, California
Project No. 22G114-2
PLATE C- 6

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-13 @ 22½ to 24'
Soil Classification	Brown Silty fine to coarse Sand

Proposed Warehouse
Riverside County, California
Project No. 22G114-2
PLATE C- 7

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

March 14, 2016

ProLogis
2817 East Cedar Street, Suite 200
Ontario, California 91761

Attention: Mr. Tom Donahue
Development Manager

Project No.: **16G116-2**

Subject: **Results of Infiltration Testing**
Proposed Industrial Facility
SWC Rider Street and Patterson Avenue
Unincorporated Riverside County, California

Gentlemen:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Proposal No. 16P106R dated January 26, 2016. The scope of services included surface reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rate of the onsite soils. The infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Site and Project Description

The subject site is located at the southwest corner of Rider Street and Patterson Avenue in the Perris area of unincorporated Riverside County, California. The site is bounded to the north by Rider Street, to the east by Patterson Avenue, to the south by Walnut Street, and to the west by existing single family residences. The general location of the site is illustrated on the Site Location Map, included as Plate 1 of this report.

The subject site consists of several contiguous rectangular-shaped parcels which total 36.91± acres in size. The site is currently vacant and undeveloped, except the southern 280± feet of the site in which four (4) single family residences are present. A few stockpiles of soil mixed with cobbles, boulders, concrete fragment, and miscellaneous debris, are present in the center of the site. The stockpiles possess estimated diameters of 30 to 160± feet with estimated heights of 2 to 12± feet. Some small piles of pallets and trash were scattered throughout the central portion of the site. Earthen swales and natural drainage courses are present in the northwestern and western portions of the site. These swales and drainage courses are estimated to be 3 to 7± feet deep and appear to drain toward the north and east. Ground surface cover throughout the site consists of exposed soil with sparse to moderate native grass and weed growth. Many small

to large trees are present in the southern portion of the site, especially near the existing single family residences.

Detailed topographic information including existing site grades was not available at the time of this report. Presently, the site grades in the central and northern regions of the site are generally lower than the remainder of the subject site and the surrounding topography. These areas appear to be approximately 6 to 7± feet lower than the southern portion of the site and the surrounding adjacent properties. Based on our review of historical aerial photographs, which were readily available on the internet, it appears that site topography was flatter and more uniform prior to 2005. Therefore, the northern and central portions of the site may have been used as a borrow site for past grading operations. Slopes with approximate inclinations of 2h:1v descend into these areas from the north and east property lines and from the southern portion of the site. In general, the overall site topography visually appears to slopes downward to the northeast at an estimated gradient of 2 to 3± percent, with localized variations including the slopes, swales, and stockpiles noted above. There was estimated to be approximately 35 to 40± feet of elevation differential across the site with a topographic high at the southwest property corner and the topographic low near the northeast property corner.

Proposed Development

Based on the site plan provided to our office by the client, the site will be developed with one (1) industrial building. The building will be located in the central portion of the site and will be 724,035± ft² in size. Dock high doors will be constructed along the north and south sides of the building. The building is expected to be surrounded by asphaltic concrete pavements in the automobile parking and drive areas and Portland cement concrete pavements in the truck court areas. The site plans indicate that landscaped planter areas will be constructed along the north and west property lines.

The proposed development will utilize on-site storm water disposal systems to dispose of storm water. Based on the site plan provided to our office by the client, the storm water disposal systems will consist of two infiltration basins located along the northern boundary and at the northeast corner of the subject site. The bottoms of the proposed infiltration basins will be approximately 8± feet below the existing site grades. However, at the time of the subsurface investigation, we understood that two additional infiltration basins would be located in the southeast and southwestern areas of the site. The bottoms of these infiltration basins would be approximately 6± feet below the existing site grades.

Concurrent Study

The subsurface exploration conducted for the geotechnical investigation for this project consisted of eight (8) borings (identified as Boring Nos. B-1 through B-8) advanced to a depth of 5 to 30± feet below the presently existing site grades. All of the borings were logged during drilling by a member of our staff.

A surficial layer of topsoil/root mat material was encountered at Boring No. B-5. This material generally consists of loose silty fine sand with moderate organic content and abundant root fibers. This material is 6± inches in thickness at the boring location. Younger native alluvium was encountered at the ground surface at Boring Nos. B-6 and B-7 extending to depths of 5 to

20± feet below existing site grades. The alluvium generally consists of loose to medium dense silty fine sands with varying medium to coarse sand content. The younger alluvium and the older alluvial soils described below possess relatively high moisture contents ranging from 19 to 30 percent. However, all of these soils possess drier apparent moisture contents when compared to the laboratory moisture content. In general, the soils appear to be dry or damp to the touch, while the laboratory moisture contents would indicate that these soils are very moist (12 to 23 percent above the optimum moisture content). The native alluvium at this site possesses appreciable calcium carbonate content in the form of calcareous nodules and veining. The discontinuity between the relatively high laboratory moisture contents and dry to damp apparent moisture contents may possibly be attributed to the calcium carbonate content and the mineralogy of the native alluvium. Older alluvium was encountered at the ground surface at Boring Nos. B-1, B-2, B-3, B-4, B-5, and B-8. The older alluvium generally extends to the maximum depth explored at the boring locations, except where it is underlain by bedrock at depths of 3 to 27± feet below the existing site grades. The older alluvium generally consists of medium dense to very dense silty fine sands with varying medium to coarse sand content. In addition, the near surface older alluvium at Boring Locations Nos. B-1, B-2 and B-3 contains occasional trace to little clay content. Boring No. B-2 encountered a layer of dense clayey fine sand to hard fine sandy clay at depths of 12 to 17± feet.

Groundwater was not encountered at any of the borings. Based on the lack of any water within the borings, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 30± feet below existing site grades, at the time of the subsurface investigation.

Subsurface Exploration

Scope of Exploration

The subsurface exploration consisted of four (4) backhoe excavated trenches, extending to depths of 5½ to 8½± feet below existing site grades. The trenches were logged during excavation by a member of our staff. The approximate locations of the infiltration trenches (identified as I-1 through I-4) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Geotechnical Conditions

Native alluvial soils were encountered at the ground surface at all four (4) of the infiltration trenches, extending to the maximum depth explored of 8½± feet below existing site grades. The alluvium generally consists of loose to very dense fine to coarse sands and silty fine to coarse sands with varying amounts of medium to coarse sands and silt content. Free water was not encountered during the excavation of any of the trenches. The Trench Logs, which illustrate the conditions encountered at the trench locations, are included with this report.

Infiltration Testing

We understand that the results of the testing will be used to prepare a preliminary design for the storm water infiltration system that will be used to dispose of storm water at the subject site.

The infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Two stainless steel infiltration rings were used for the infiltration testing. The outer infiltration ring is 2 feet in diameter and 20 inches in height. The inner infiltration ring is 1 foot in diameter and 20 inches in height. At each test location, the outer ring was driven 3± inches into the soil at the base of the trench. The inner ring was centered inside the outer ring and subsequently driven 3± inches into the soil at the base of the trench. The rings were driven into the soil using a ten-pound sledgehammer. The soil surrounding the wall of the infiltration rings was only slightly disturbed during the driving process.

Infiltration Testing Procedure

Infiltration testing was performed at all four of the test locations. The infiltration testing consisted of filling the inner ring and the annular space (the space between the inner and outer rings) with water, approximately 3 to 4± inches above the soil. To prevent the flow of water from one ring to the other, the water level in both the inner ring and the annular space between the rings were maintained using constant-head float valves. The volume of water that was added to maintain a constant head in the inner ring and the annular space during each time interval was determined and recorded. A cap was placed over the rings to minimize the evaporation of water during the test.

The schedule for readings was determined based on the observed soil type at the base of each backhoe excavated trenches. Due to the varying silt content and the relative density of the existing soils at each infiltration test location, the volumetric measurements were made at increments of 5 to 30 minutes. The water volume measurements are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on these spreadsheets.

The infiltration rates for all the tests are calculated in centimeters per hour and then converted to inches per hour. These rates are summarized below:

Infiltration Test No.	**Soil Description**	**Infiltration Rate (inches/hour)**
I-1	Silty fine to medium Sand, some coarse Sand	0.5
I-2	Silty fine to coarse Sand	0.3
I-3	Silty fine to medium Sand, little coarse Sand	1.7
I-4	Fine to coarse Sand, some Silt	4.8

Laboratory Testing

Grain Size Analysis

The grain size distribution of selected soils from the base of each infiltration test trench has been

determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of these tests are presented at the end of this report.

Design Recommendations

A total of four (4) infiltration tests were performed at the subject site. As noted above, the calculated infiltration rates at the infiltration test locations range from 0.3 to 4.8 inches per hour. The primary factors affecting the infiltration rates are the silt content and the high relative densities of the encountered soils, which vary at different depths and locations at the subject site. In general, higher silt content and dense to very dense relative densities were observed within the soil exposed at the bottom of Infiltration Test Nos. I-1 and I-2, which exhibited slower infiltration rates. Additionally, soils at greater depths exhibited higher relative densities and slower infiltration rates.

Based on the infiltration test results, we recommend a design infiltration rate of 0.3 inches per hour for the proposed detention basins located along the northern boundary and the northeast corner of the site and an infiltration rate of 1.7 inches per hour for the design of the two additional basins located at the southeast and southwestern corners of the subject site.

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of the basins. It should be confirmed that the soils at the base of the proposed infiltration systems correspond with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

The design of the proposed storm water infiltration systems should be performed by the project civil engineer, in accordance with the Riverside County guidelines. **It is recommended that the project civil engineer apply an appropriate factor of safety.** It is also recommended that the systems be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the systems. The presence of such materials would decrease the effective infiltration rates. **The infiltration rates recommended above are based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rates.** It should be noted that the recommended infiltration rates are based on infiltration testing at four (4) discrete locations and the overall infiltration rate of the storm water infiltration systems could vary considerably.

Infiltration versus Permeability

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. The infiltration rates presented herein were determined in accordance with the ASTM Test Method D-3385-03 standard, and are considered valid for the time and place of the

actual test. Changes in soil moisture content will affect these infiltration rates. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration areas could potentially be damaged due to saturation of subgrade soils. If possible, all of the proposed infiltration systems for this site should be located at least 25 feet away from any structures, including retaining walls. Even with this provision of locating the infiltration systems at least 25 feet from the buildings, it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

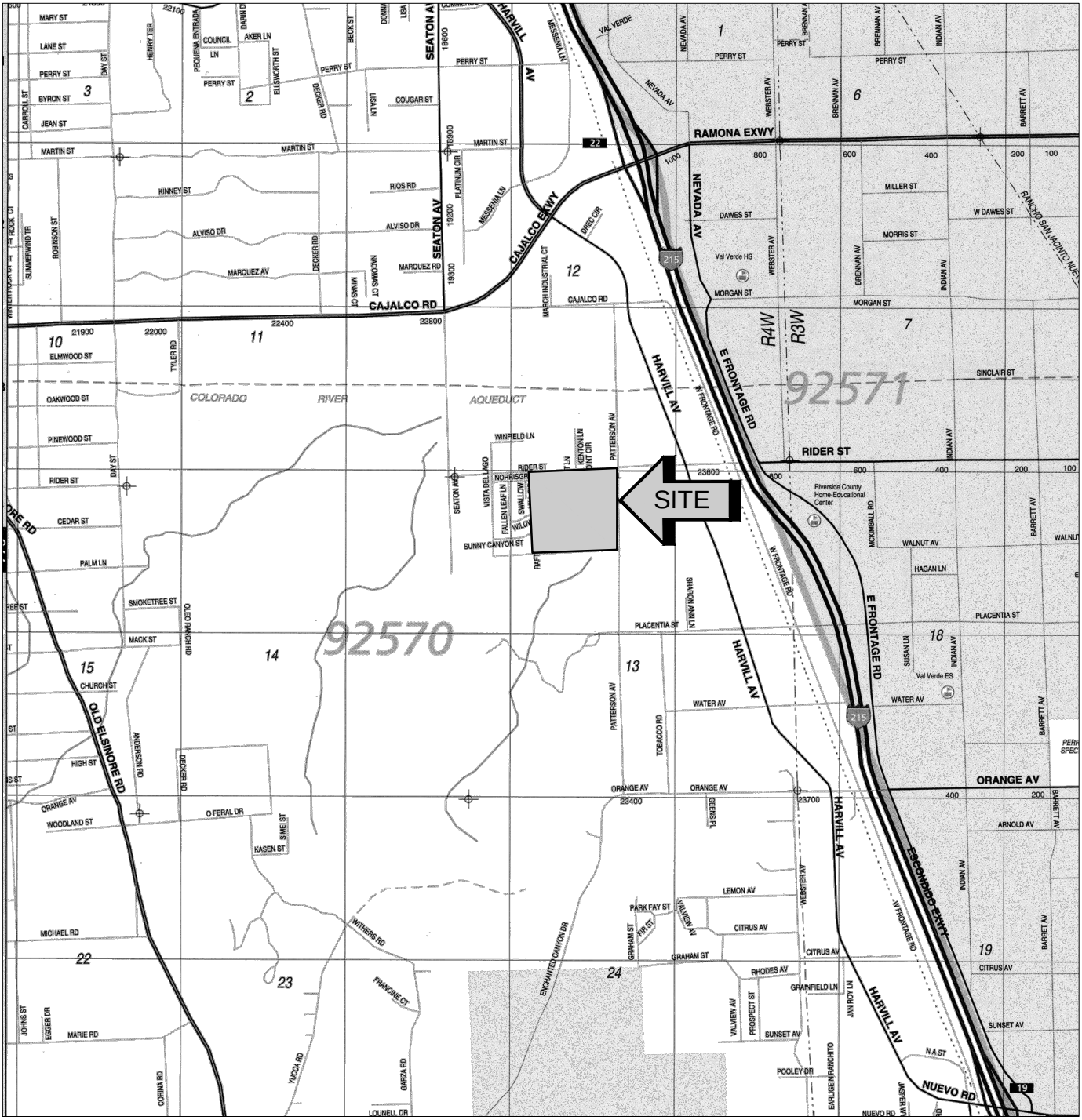
Scott McCann
Staff Scientist

REGISTERED PROFESSIONAL ENGINEER
JOHN A. SEMINARA
No. 2294
GEOTECHNICAL
STATE OF CALIFORNIA

John A. Seminara, GE 2294
Principal Engineer

Distribution: (1) Addressee

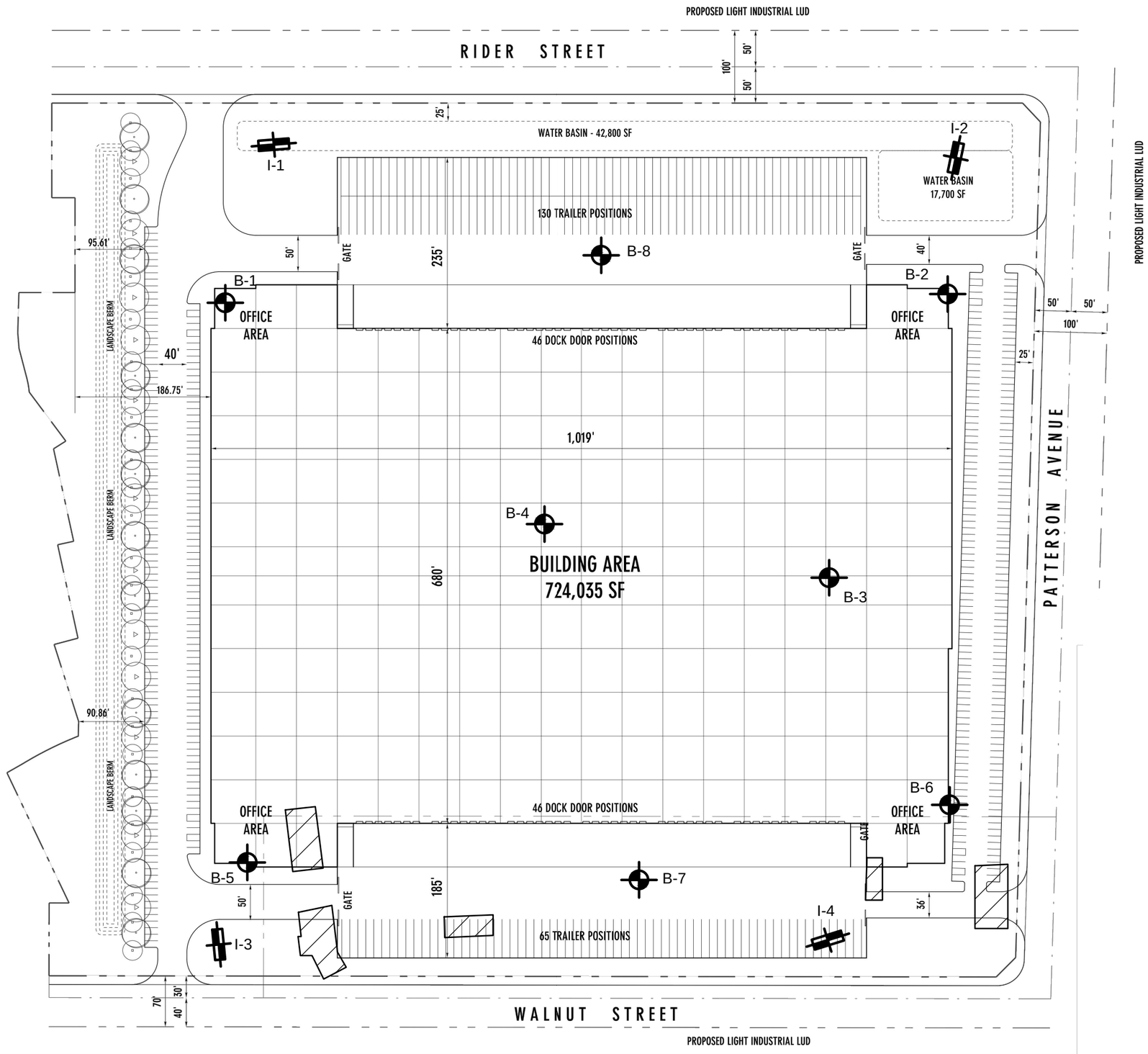
Enclosures: Plate 1 Site Location Map
Plate 2 Infiltration Test Location Plan
Trench Logs (4 pages)
Infiltration Test Results Spreadsheets (4 pages)
Grain Size Distribution Graphs (4 pages)



SOURCE: RIVERSIDE COUNTY
THOMAS GUIDE, 2013

SITE LOCATION MAP
PROPOSED INDUSTRIAL FACILITY
RIVERSIDE COUNTY, CALIFORNIA
SCALE: 1" = 2400'
DRAWN: JL CHKD: JAS
SCG PROJECT 16G116-2
PLATE 1

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION FROM CONCURRENT STUDY (SCG PROJECT NO. 16G116-1)
- RESIDENCES TO BE DEMOLISHED

NOTE: BASE SITE MAP PREPARED BY RGA.

INFILTRATION TEST LOCATION PLAN	
PROPOSED INDUSTRIAL FACILITY	
RIVERSIDE COUNTY, CALIFORNIA	
SCALE: 1" = 150'	SOUTHERN CALIFORNIA GEOTECHNICAL
DRAWN: JL CHKD: JAS	
SCG PROJECT 16G116-2	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-1

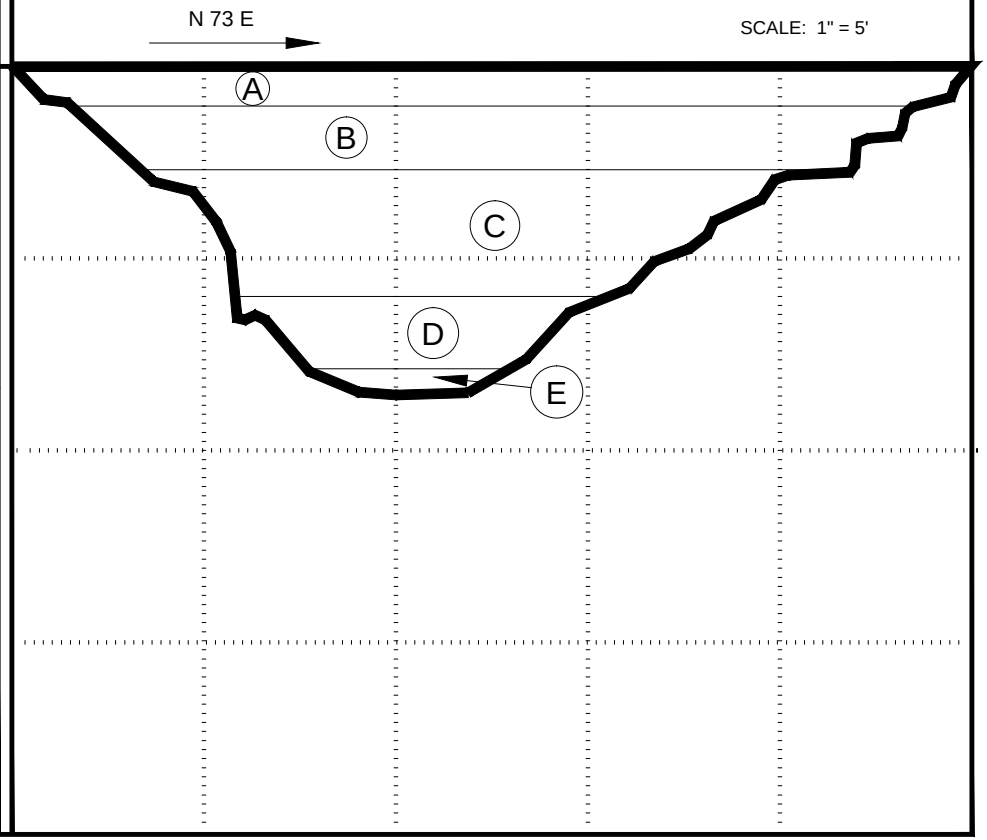
JOB NO.: 16G116-2
PROJECT: Proposed Industrial Facility
LOCATION: Riverside County, CA
DATE: 2-19-2016

EQUIPMENT USED: Backhoe
LOGGED BY: Scott McCann
ORIENTATION: N 73 E
ELEVATION: --

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: ALLUVIUM: Light Brown fine to coarse Sand, little Silt, trace fine root fibers, loose - damp
				B: ALLUVIUM: Brown fine to medium Sand, trace coarse Sand, little Silt, medium dense - damp
				C: ALLUVIUM: Light Brown Silty fine to medium Sand, trace coarse Sand, dense - damp
5				D: ALLUVIUM: Light Brown fine to coarse Sand, trace Silt, medium dense - damp
				E: ALLUVIUM: Light Brown Silty fine to medium Sand, some coarse Sand, dense - dry
				Trench Terminated @ 8.5 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-2

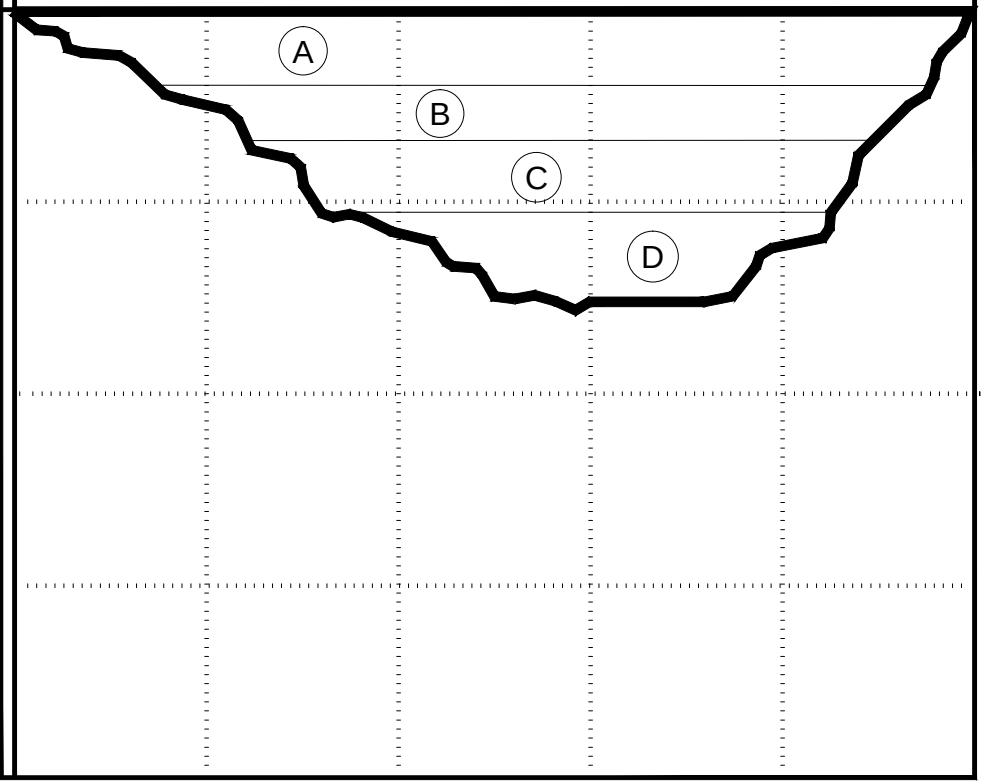
JOB NO.: 16G116-2
PROJECT: Proposed Industrial Facility
LOCATION: Riverside County, CA
DATE: 2-19-2016

EQUIPMENT USED: Backhoe
LOGGED BY: Scott McCann
ORIENTATION: S 11 E
ELEVATION: --

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine root fibers, medium dense - moist
				B: ALLUVIUM: Light Brown fine to coarse Sand, trace Silt, dense - damp
				C: ALLUVIUM: Light Brown fine to medium Sand, little coarse Sand, medium dense - dry
5				D: ALLUVIUM: Light Brown Silty fine to coarse Sand, very dense - dry
				Trench Terminated @ 7.5 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-2

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-3

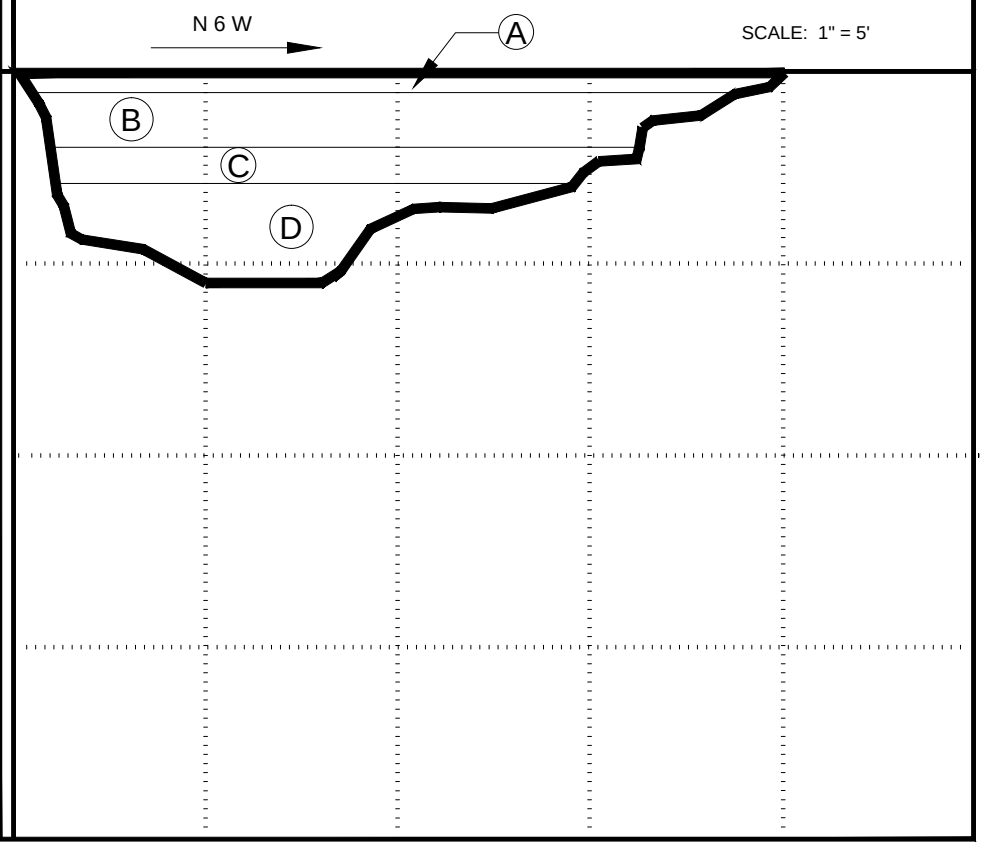
JOB NO.: 16G116-2
PROJECT: Proposed Industrial Facility
LOCATION: Riverside County, CA
DATE: 2-19-2016

EQUIPMENT USED: Backhoe
LOGGED BY: Scott McCann
ORIENTATION: N 6 W
ELEVATION: --

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: ALLUVIUM: Light Brown Silty fine to medium Sand, abundant fine root fibers, loose - damp B: ALLUVIUM: Light Brown Silty fine to coarse Sand, trace coarse Sand, trace fine root fibers, medium dense - damp C: ALLUVIUM: Light Brown fine to medium Sand, little coarse Sand, little Silt, dense - damp D: ALLUVIUM: Light Brown Silty fine to medium Sand, little coarse Sand, medium dense - damp
5				Trench Terminated @ 5.5 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-3

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-4

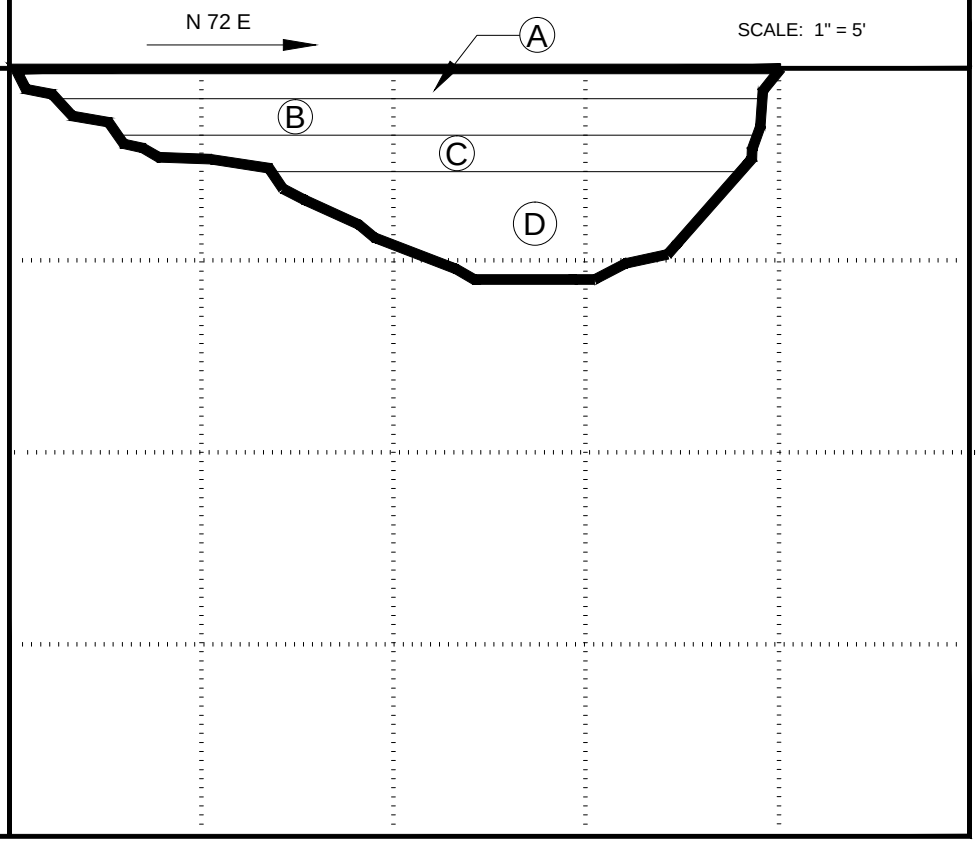
JOB NO.: 16G116-2
PROJECT: Riverside County, CA
LOCATION: Perris, CA
DATE: 2-19-2016

EQUIPMENT USED: Backhoe
LOGGED BY: Scott McCann
ORIENTATION: N 72 E
ELEVATION: --

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: ALLUVIUM: Light Brown fine to medium Sand, little coarse Sand, trace Silt, trace fine root fibers, loose to medium dense- damp B: ALLUVIUM: Light Brown fine to coarse Sand, trace Silt, medium dense - damp C: ALLUVIUM: Brown fine to medium Sand, little coarse Sand, little Silt, trace roots, medium dense - damp D: ALLUVIUM: Light Brown fine to coarse Sand, some Silt, trace fine root fibers, dense - dry
5				Trench Terminated @ 5.5 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-4

INFILTRATION CALCULATIONS

Project Name	Proposed Industrial Facility
Project Location	Riverside County, CA
Project Number	16G116-2
Engineer	Scott McCann

Infiltration Test No	I-1

Constants			
	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	729.6
Annular	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Time Interval **Elapsed** (min)	Flow Readings				Infiltration Rates			
				Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	2:00 PM	30	100	1000	200	2800	2.74	2.56	1.08	1.01
	Final	2:30 PM	**30**	1100		3000					
2	Initial	2:31 PM	30	250	800	100	2600	2.19	2.38	0.86	0.94
	Final	3:01 PM	**60**	1050		2700					
3	Initial	3:02 PM	30	100	650	300	2500	1.78	2.28	0.70	0.90
	Final	3:32 PM	**90**	750		2800					
4	Initial	3:33 PM	30	100	550	200	2450	1.51	2.24	0.59	0.88
	Final	4:03 PM	**120**	650		2650					
5	Initial	4:04 PM	30	250	525	100	2450	1.44	2.24	0.57	0.88
	Final	4:34 PM	**150**	775		2550					
6	Initial	4:35 PM	30	100	525	300	2400	1.44	2.19	0.57	0.86
	Final	5:05 PM	**180**	625		2700					

INFILTRATION CALCULATIONS

Project Name	Proposed Industrial Facility
Project Location	Riverside County, CA
Project Number	16G116-2
Engineer	Scott McCann

Infiltration Test No	I-2

Constants			
	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	729.6
Annular	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Time Interval **Elapsed** (min)	Flow Readings				Infiltration Rates			
				Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	9:10 AM	30	25	450	100	1200	1.23	1.10	0.49	0.43
	Final	9:40 AM	**30**	475		1300					
2	Initial	9:41 AM	30	150	400	200	1100	1.10	1.01	0.43	0.40
	Final	10:11 AM	**60**	550		1300					
3	Initial	10:12 AM	30	100	375	200	1050	1.03	0.96	0.40	0.38
	Final	10:42 AM	**90**	475		1250					
4	Initial	10:43 AM	30	25	375	100	1050	1.03	0.96	0.40	0.38
	Final	11:13 AM	**120**	400		1150					
5	Initial	11:14 AM	30	150	350	200	950	0.96	0.87	0.38	0.34
	Final	11:44 AM	**150**	500		1150					
6	Initial	11:45 AM	30	100	350	200	900	0.96	0.82	0.38	0.32
	Final	12:15 PM	**180**	450		1100					

INFILTRATION CALCULATIONS

Project Name	Proposed Industrial Facility
Project Location	Riverside County, CA
Project Number	16G116-2
Engineer	Scott McCann

Infiltration Test No: I-3

Constants	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	729.6
Annular	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Time Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	12:57 PM	10	200	1150	50	3850	9.46	10.55	3.72	4.15
	Final	1:07 PM	**10**	1350		3900					
2	Initial	1:08 PM	10	150	725	100	3800	5.96	10.42	2.35	4.10
	Final	1:18 PM	**20**	875		3900					
3	Initial	1:19 PM	10	0	600	400	3450	4.93	9.46	1.94	3.72
	Final	1:29 PM	**30**	600		3850					
4	Initial	1:30 PM	10	50	600	400	3000	4.93	8.22	1.94	3.24
	Final	1:40 PM	**40**	650		3400					
5	Initial	1:41 PM	10	50	550	300	2600	4.52	7.13	1.78	2.81
	Final	1:51 PM	**50**	600		2900					
6	Initial	1:52 PM	10	100	550	200	2500	4.52	6.85	1.78	2.70
	Final	2:02 PM	**60**	650		2700					

INFILTRATION CALCULATIONS

Project Name	Proposed Industrial Facility
Project Location	Riverside County, CA
Project Number	16G116-2
Engineer	Scott McCann

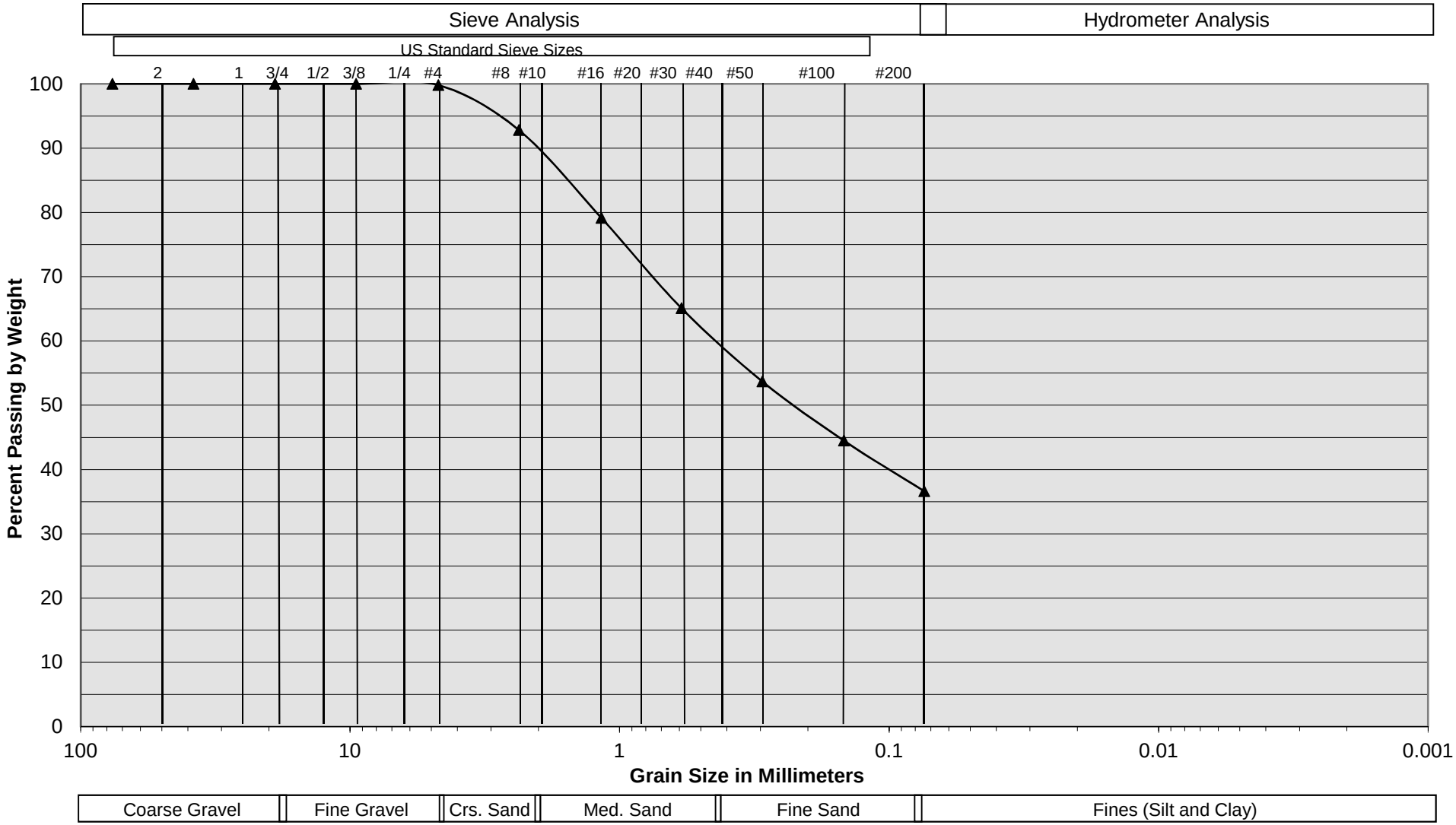
Infiltration Test No: I-4

Constants	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	729.6
Annular	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Time Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	8:40 AM	5	400	1400	500	4400	23.03	24.12	9.07	9.50
	Final	8:45 AM	**5**	1800		4900					
2	Initial	8:46 AM	5	150	925	300	3550	15.21	19.46	5.99	7.66
	Final	8:51 AM	**10**	1075		3850					
3	Initial	8:52 AM	5	300	825	400	2900	13.57	15.90	5.34	6.26
	Final	8:57 AM	**15**	1125		3300					
4	Initial	8:58 AM	5	250	800	500	2800	13.16	15.35	5.18	6.04
	Final	9:03 AM	**20**	1050		3300					
5	Initial	9:04 AM	5	400	750	850	2750	12.33	15.08	4.86	5.94
	Final	9:09 AM	**25**	1150		3600					
6	Initial	9:10 AM	5	300	750	100	2700	12.33	14.80	4.86	5.83
	Final	9:15 AM	**30**	1050		2800					
7	Initial	9:16 AM	5	200	750	800	2700	12.33	14.80	4.86	5.83
	Final	9:21 AM	**35**	950		3500					

Grain Size Distribution

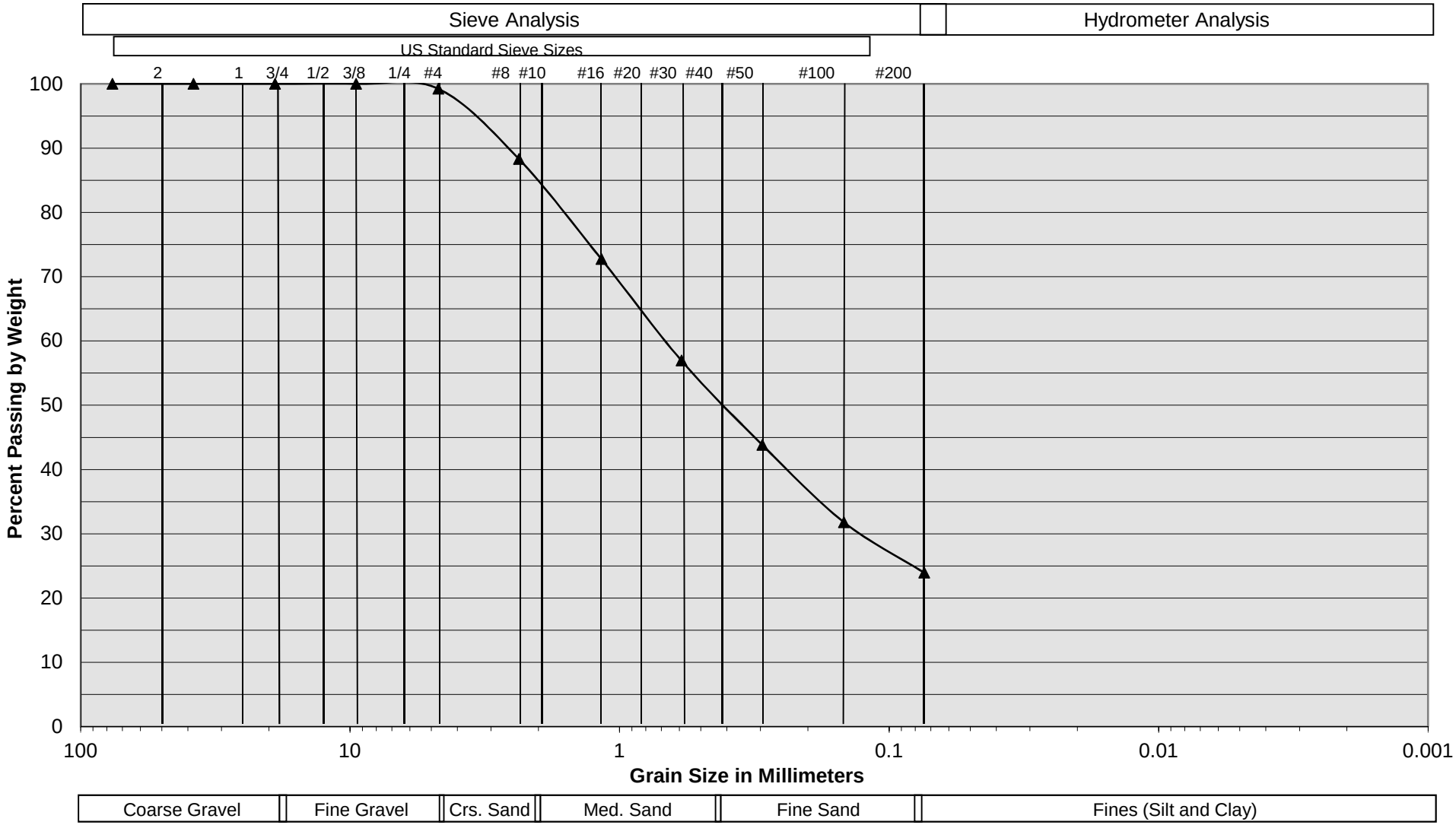


Sample Description	I-1 @ 8½ feet
Soil Classification	Light Brown Silty fine to medium Sand, some coarse Sand

Proposed Industrial Facility
Riverside County, California
Project No. 16G116-2
PLATE C-1

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

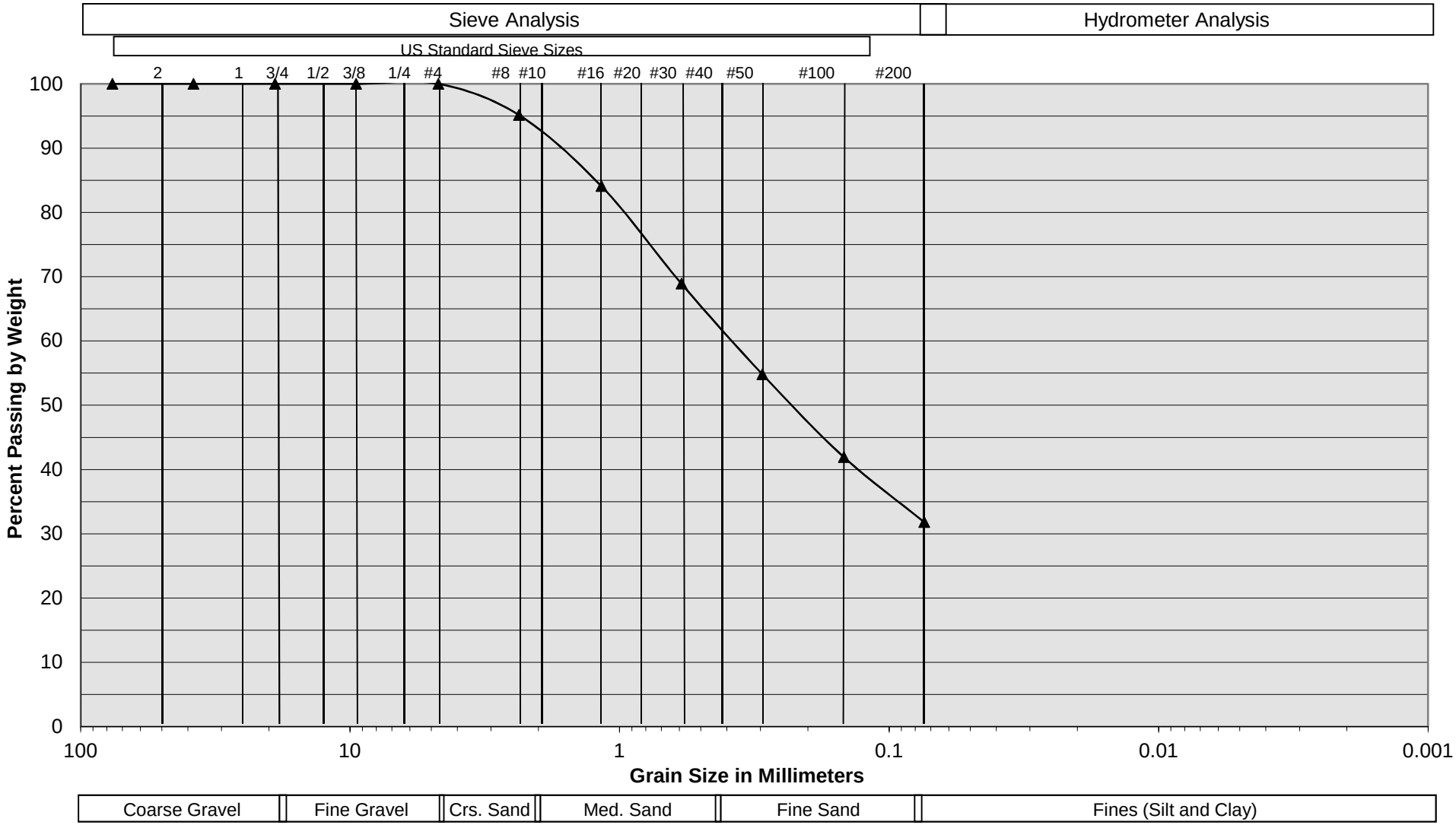


Sample Description	I-2 @ 7½ feet
Soil Classification	Light Brown Silty fine to coarse Sand

Proposed Industrial Facility
Riverside County, California
Project No. 16G116-2
PLATE C-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

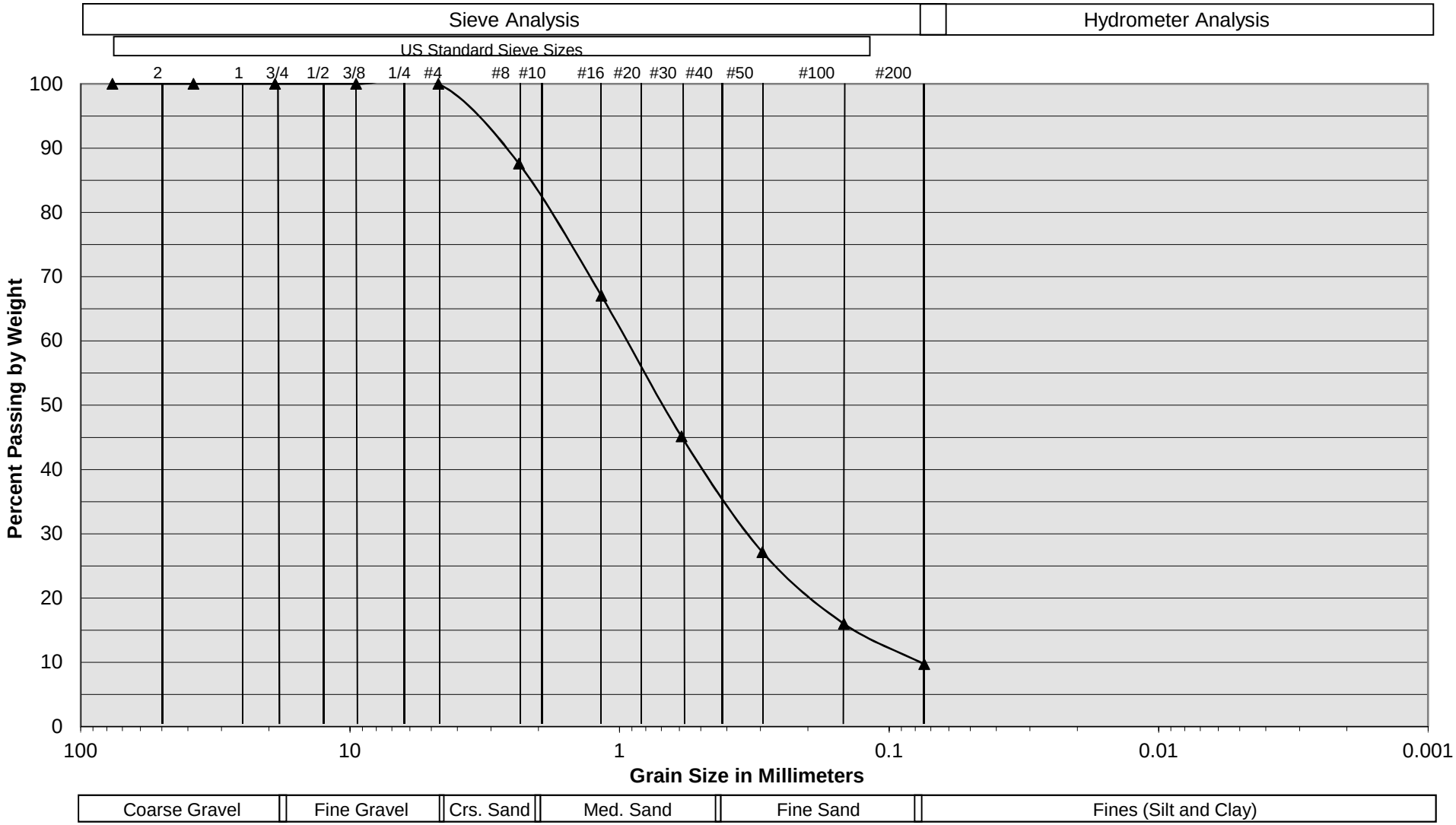


Sample Description	I-3 @ 5½ feet
Soil Classification	Light Brown Silty fine to medium Sand, little coarse Sand

Proposed Industrial Facility
Riverside County, California
Project No. 16G116-2
PLATE C-3

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-4 @ 5½ feet
Soil Classification	Light Brown fine to coarse Sand, some Silt

Proposed Industrial Facility
Riverside County, California
Project No. 16G116-2
PLATE C-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

GEOTECHNICAL INVESTIGATION
PROPOSED INDUSTRIAL FACILITY

SWC Rider Street and Patterson Avenue
Riverside County, California

SOUTHERN
CALIFORNIA
GEOTECHNICAL
A California Corporation

March 8, 2016

Project No.: **16G116-1**

Subject: **Geotechnical Investigation**
Proposed Industrial Facility
SWC Rider Street and Patterson Avenue
Riverside County, California

Gentlemen:

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Daniel W. Nielsen, RCE 77915
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
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Distribution: (1) Addressee

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D Grading Guide Specifications
E Seismic Design Parameters

1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Site Preparation

- Initial site preparation should include stripping of the existing native grass and weed growth, organic topsoil materials, and any trees that will not remain with the proposed development. At this time, the minor amounts of existing debris and trash should be removed from the site.
- Demolition of the single family residence structures in the southern portion of the site will be necessary in order to facilitate the construction of the proposed development. Demolition should include all foundations, floor slabs, utilities and any other subsurface improvements that will not remain in place with the new development.
- The near surface soils consist of younger and older native alluvium which possesses variable densities. Some of the near surface soils, especially in the southeast portion of the site, possess a minor to moderate potential for hydrocollapse. Additionally, based on the existing site topography, the proposed grading is expected to create cut-fill transitions in the proposed building pad area. Therefore, remedial grading is recommended to remove a portion of the near surface native alluvium and replace these soils as compacted structural fill soils. The recommended remedial grading will reduce potential differential settlements by creating more uniform conditions across cut/fill transitions and by replacing near surface variable strength and collapsible soils as compacted structural fill.
- The proposed building area should be overexcavated to a depth of at least 3 feet below existing grade and to a depth of 3 feet below the proposed building pad subgrade elevation. Within the foundation influence zones, the overexcavation should extend to a depth of at least 2 feet below proposed foundation bearing grade. The overexcavation should extend horizontally at least 5 feet beyond the building perimeter. Additional overexcavation will be necessary in the area of Boring No. B-6 to remove potentially collapsible, low density, soils which extend to depths of 7 to 8± feet.
- After overexcavation has been completed, the resulting subgrade soils should be evaluated by the geotechnical engineer to identify any additional soils that should be removed. The resulting subgrade should then be scarified to a depth of 12 inches and moisture conditioned to 2 to 4 percent above optimum. The previously excavated soils may then be replaced as compacted structural fill. All structural fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density.
- The new pavement and flatwork subgrade soils are recommended to be scarified to a depth of 12± inches, thoroughly moisture conditioned and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundations

- Conventional shallow foundations, supported in newly placed compacted fill.
- 2,500 lbs/ft^2 maximum allowable soil bearing pressure.
- Reinforcement consisting of at least four (4) No. 5 rebars (2 top and 2 bottom) in strip footings. Additional reinforcement may be necessary for structural considerations.

Building Floor Slab

- Conventional Slab-on-grade, 6 inches thick.
- Modulus of Subgrade Reaction: 125 psi/in
- Reinforcement is not required for geotechnical conditions. The actual floor slab reinforcement should be determined by the structural engineer.

Pavements

ASPHALT PAVEMENTS (R = 60)				
Materials	**Thickness (inches)**			
	Automobile Parking and Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic		
		(TI = 6.0)	(TI = 7.0)	(TI = 8.0)
Asphalt Concrete	3	3½	4	5
Aggregate Base	3	3	3	3
Compacted Subgrade	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS			
Materials	**Thickness (inches)**		
	Autos Parking and Light Truck Traffic (TI = 5.0 & 6.0)	Truck Traffic	
		(TI = 7.0)	(TI = 8.0)
PCC	5	6½	7½
Compacted Subgrade (95% minimum compaction)	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 16P106R, dated January 26, 2016. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slabs, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located at the southwest corner of Rider Street and Patterson Avenue in the Perris area of unincorporated Riverside County, California. The site is bounded to the north by Rider Street, to the east by Patterson Avenue, to the south by Walnut Street, and to the west by existing single family residences. The general location of the site is illustrated on the Site Location Map, included as Plate 1 of this report.

The subject site consists of several contiguous rectangular-shaped parcels which total 36.91± acres in size. The site is currently vacant and undeveloped, except the southern 280± feet of the site in which four (4) single family residences are present. A few stockpiles of soil mixed with cobbles, boulders, concrete fragment, and miscellaneous debris, are present in the center of the site. The stockpiles possess estimated diameters of 30 to 160± feet with estimated heights of 2 to 12± feet. Some small piles of pallets and trash were scattered throughout the central portion of the site. Earthen swales and natural drainage courses are present in the northwestern and western portions of the site. These swales and drainage courses are estimated to be 3 to 7± feet deep and appear to drain toward the north and east. Ground surface cover throughout the site consists of exposed soil with sparse to moderate native grass and weed growth. Many small to large trees are present in the southern portion of the site, especially near the existing single family residences.

Detailed topographic information including existing site grades was not available at the time of this report. Presently, the site grades in the central and northern regions of the site are generally lower than the remainder of the subject site and the surrounding topography. These areas appear to be approximately 6 to 7± feet lower than the southern portion of the site and the surrounding adjacent properties. Based on our review of historical aerial photographs, which were readily available on the internet, it appears that site topography was flatter and more uniform prior to 2005. Therefore, the northern and central portions of the site may have been used as a borrow site for past grading operations. Slopes with approximate inclinations of 2h:1v descend into these areas from the north and east property lines and from the southern portion of the site. In general, the overall site topography visually appears to slopes downward to the northeast at an estimated gradient of 2 to 3± percent, with localized variations including the slopes, swales, and stockpiles noted above. There was estimated to be approximately 35 to 40± feet of elevation differential across the site with a topographic high at the southwest property corner and the topographic low near the northeast property corner.

3.2 Proposed Development

Based on the site plan provided to our office by the client, the site will be developed with one (1) industrial building. The building will be located in the central portion of the site and will be 724,035± ft² in size. Dock high doors will be constructed along the north and south sides of the building. The building is expected to be surrounded by asphaltic concrete pavements in the

automobile parking and drive areas and Portland cement concrete pavements in the truck court areas. The site plans indicate that landscaped planter areas will be constructed along the north and west property lines.

Detailed structural information has not been provided. It is assumed that the new building will be a single story structure of tilt-up concrete construction, supported on conventional shallow foundations with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 80 kips and 3 to 5 kips per linear foot, respectively. The proposed development is not expected to include any significant amounts of below grade construction such as basements or crawl spaces.

Detailed grading plans for the proposed development are not currently available. Based on the existing topography, and assuming a relatively balanced site, maximum cuts and fills on the order of 10 to 12± feet are expected to be necessary to achieve the proposed site grades within the building areas. Retaining walls of about 4± feet in height are expected to be necessary in the new truck loading areas.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of eight (8) borings (identified as Boring Nos. B-1 through B-8) advanced to a depth of 5 to 30± feet below the presently existing site grades. All of the borings were logged during drilling by a member of our staff.

The borings were advanced with hollow-stem augers, by a conventional truck-mounted drilling rig. Representative bulk and relatively undisturbed soil samples were taken during drilling. Relatively undisturbed samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. Samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings are indicated on the Boring Location Plan, included as Plate 2 in Appendix A of this report. The Boring Logs, which illustrate the conditions encountered at the boring locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Topsoil/Root Mat

A surficial layer of topsoil/root mat material was encountered at Boring No. B-5. This material generally consists of loose silty fine sand with moderate organic content and abundant root fibers. This material is 6± inches in thickness at the boring location.

Younger Alluvium

Younger native alluvium was encountered at the ground surface at Boring Nos. B-6 and B-7 extending to depths of 5 to 20± feet below existing site grades. The alluvium generally consists of loose to medium dense silty fine sands with varying medium to coarse sand content.

The younger alluvium and the older alluvial soils described below possess relatively high moisture contents ranging from 19 to 30 percent. However, all of these soils possess drier apparent moisture contents when compared to the laboratory moisture content. In general, the soils appear to be dry or damp to the touch, while the laboratory moisture contents would indicate that these soils are very moist. The native alluvium at this site possesses appreciable

calcium carbonate content in the form of calcareous nodules and veining. The discontinuity between the relatively high laboratory moisture contents and dry to damp apparent moisture contents may possibly be attributed to the calcium carbonate content and the mineralogy of the native alluvium.

Older Alluvium

Older alluvium was encountered at the ground surface at Boring Nos. B-1, B-2, B-3, B-4, B-5, and B-8. The older alluvium generally extends to the maximum depth explored at the boring locations, except where it is underlain by bedrock at depths of 3 to 27± feet below the existing site grades. The older alluvium generally consists of medium dense to very dense silty fine sands with varying medium to coarse sand content. In addition, the near surface older alluvium at Boring Locations Nos. B-1, B-2 and B-3 contains occasional trace to little clay content. Boring No. B-2 encountered a layer of dense clayey fine sand to hard fine sandy clay at depths of 12 to 17± feet.

Bedrock

Bedrock was present beneath the older alluvium at Boring Location Nos. B-1, B-2, and B-5. Generally, the bedrock consists of gray brown to light gray brown, very dense, highly weathered, tonalite.

Groundwater

Groundwater was not encountered at any of the borings. Based on the lack of any water within the borings, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 30± feet below existing site grades, at the time of the subsurface investigation.

As part of our research, we reviewed readily available groundwater data in order to determine regional groundwater depths. Recent water level data was obtained from the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring well on record is located approximately 1.65 miles east of the site. Water level readings within this monitoring well indicate a high groundwater level of 72± feet (February 2015) below the ground surface.

4.3 Geologic Conditions

Regional geologic conditions were obtained from the Geologic Map of the Steele Peak 7.5′ Quadrangle, Riverside County, California, by Douglas M. Morton published by the California Department of Mines and Geology and United States Air Force, 2001. This map indicates that the site is predominantly underlain by early Pleistocene (Map Symbol Qvof) old alluvial valley deposits. Morton describes these deposits as predominantly composed of moderately indurated, slightly dissected, sandy alluvium, containing lesser silt, and clay-bearing alluvium. A portion of this map indicating the location of the subject site is included as Plate 3 in Appendix A.

Bedrock materials were encountered at Boring Nos. B-1, B-2 and B-5. Based on the mapping of the geologic formations present near the subject site, it is our opinion that the near-surface

older alluvium is underlain by Val Verde tonalite (Map Symbol Kvt) formation. Morton describes this formation as gray-weathering, relatively homogeneous, massive to well-foliated, medium to coarse grained, hypautomorphic granular biotite-hornblende tonalite. The geologic conditions at the site are consistent with the mapped geologic conditions.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Consolidation

Selected soil samples have been tested to determine their consolidation and collapse potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-8 in Appendix C of this report.

Maximum Dry Density and Optimum Moisture Content

A representative bulk samples has been tested for its maximum dry density and optimum moisture content. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557, and are presented on Plate C-9 in Appendix C of this report. These tests are generally used to with compare the dry densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Expansion Index

The expansion potential of the on-site soils was determined in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to 50± 1 percent saturation and then loaded with a

surcharge equivalent to 144 pounds per square foot. The sample is then inundated with water, and allowed to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The results of the EI testing are as follows:

Sample Identification	Expansion Index	Expansive Potential
B-3 @ 0 to 5 feet	18	Very Low

Soluble Sulfates

Representative samples of the near-surface soils were submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Sulfate Classification
B-1 @ 0 to 5 feet	0.005	Negligible
B-3 @ 0 to 5 feet	0.020	Negligible

Resistivity and pH Testing

A representative bulk sample of soil collected from the building area was submitted to a subcontracted analytical laboratory for determination of electrical resistivity and pH. The resistivity of the soils is a measure of their potential to attack buried metal improvements such as utility lines. The results of the resistivity and pH testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Resistivity (ohm-cm)	pH
B-3 @ 0-5 feet	1400	7.4

R-value

The R-(resistance) value was determined for a representative soil sample, taken from the proposed parking and drive lane areas, in accordance with CA Test Method 301. This test provides a measure of the pavement support characteristics of the soils, and is used in the pavement thickness design procedure. The results of the R-value testing are as follows:

Sample Identification	R-Value
B-3 @ 0 to 5 feet	60

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations. The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structures should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

The 2013 California Building Code (CBC) was adopted by all municipalities within Southern California on January 1, 2014. The CBC provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

The 2013 CBC Seismic Design Parameters have been generated using U.S. Seismic Design Maps, a web-based software application developed by the United States Geological Survey. This software application, available at the USGS web site, calculates seismic design parameters in accordance with the 2013 CBC, utilizing a database of deterministic site accelerations at 0.01 degree intervals. The table below is a compilation of the data provided by the USGS application. A copy of the output generated from this program is included in Appendix E of this report. A copy of the Design Response Spectrum, as generated by the USGS application is also included in Appendix E. Based on this output, the following parameters may be utilized for the subject site:

2013 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	1.500
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.600
Site Class	---	C
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	1.500
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	0.780
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.000
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.520

Liquefaction

Liquefaction is the loss of strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and plasticity characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Non-sensitive clayey (cohesive) soils which possess a plasticity index of at least 18 (Bray and Sancio, 2006) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The Riverside County GIS website indicates that the subject site is located within a zone of low liquefaction susceptibility. Based on this mapping, the scope of work for this investigation did not include a site specific liquefaction evaluation. The subsurface exploration performed at the site identified conditions that are considered to be nonconductive to liquefaction, including near surface soils consisting of older alluvium, relatively shallow very dense tonalite bedrock at three of the boring locations, and the lack of a static groundwater table within the upper 30± feet. In addition, readily available groundwater data from the state groundwater data library website indicates that the static groundwater table has historically been present at depths of 72± feet or greater for the nearest well to the subject site. Based on these factors, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

The near surface soils at the boring locations consist of medium dense alluvium and medium dense to very dense older alluvium. The results of laboratory testing indicate that some of the younger alluvial soils present within the upper 7 to 8± possess a minor potential for collapse.

Additionally, based on the present site topography, it is expected that some cut/fill transitions will be created during grading for the proposed structure. Remedial grading is considered warranted within the proposed building area, in order to remove a portion of the near surface alluvium and replace these materials as compacted structural fill. The recommended remedial grading will reduce potential differential settlements by creating more uniform conditions across cut/fill transitions and by replacing near surface variable strength soils as compacted fill.

The near-surface soils at this site possess moisture contents ranging from 19 to 30 percent, based on laboratory testing performed on the samples recovered at the boring locations. These moisture contents are 12 to 23 percent higher than the optimum moisture content. However, by visual inspection, most of the soils encountered at the borings appeared to have lower moisture contents than laboratory testing indicates. The on-site soils are considered to possess characteristics of a mineral structure that causes the soil to appear less moist. This characteristic may possibly be attributed to the presence of calcium chloride, which was observed in the form of calcareous veining or nodules in many of the recovered samples. While we do not expect the relatively high moisture content to cause subgrade instability, the relatively high moisture contents may pose a challenge to site grading, with respect to achieving uniform moisture contents suitable for compaction.

Settlement

The recommended remedial grading will remove a portion of the near-surface native alluvium and replace these soils as compacted structural fill. The native soils that will remain in place below the recommended depth of overexcavation will not be subject to significant load increases from the foundations of the new structures. Provided that the recommended remedial grading is completed, the post-construction static settlements of the proposed structures are expected to be within tolerable limits.

Soluble Sulfates

The results of the soluble sulfate testing indicate that the selected samples of the on-site soils contain negligible concentrations of soluble sulfates, in accordance with American Concrete Institute (ACI) guidelines. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building area.

Expansion

Laboratory testing performed on representative samples of the near surface soils indicates that these materials possess a very low expansion potential (EI = 18). Therefore, no design considerations related to expansive soils are considered warranted for this site. It is recommended that additional expansion index testing be conducted at the completion of rough grading to verify the expansion potential of the as-graded building pads.

Corrosion Potential

The results of the electrical resistivity and pH testing indicate that a sample of the on-site soils possesses an electrical resistivity of 1,400 ohm-cm and a pH value of 7.4. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which characteristics of the soils are used to quantify the corrosivity characteristics of the site. Resistivity and pH are two of the five factors that enter into the evaluation procedure. Relative soil moisture content as well as redox potential and sulfide testing are also included in the DIPRA procedure. Although redox potential and sulfide testing were not a part of the scope of this investigation, we have evaluated the corrosivity characteristics of the on-site soils using resistivity, pH and moisture content. **Based on these factors, and utilizing the DIPRA procedure, some of the on-site soils are considered to be moderately corrosive to ductile iron pipe.** Therefore, it is expected that polyethylene encasement will be required for ductile iron pipe. The client may also wish to contact a corrosion engineer to provide a more thorough evaluation.

Shrinkage/Subsidence

Removal and recompaction of the near surface younger alluvium is estimated to result in an average shrinkage of 10 to 15 percent. Removal and recompaction of the near surface older alluvium is expected to result in an average shrinkage of up to 5 to 10 percent. Minor ground subsidence is expected to occur in the soils below the zone of removal, due to settlement and machinery working. The subsidence is estimated to be 0.1± feet. This estimate may be used for grading in areas that are underlain by native alluvial soils.

These estimates are based on previous experience and the subsurface conditions encountered at the boring locations. The actual amount of subsidence is expected to be variable and will be dependant on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Grading and Foundation Plan Review

It is recommended that we be provided with copies of the grading and foundation plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Initial site preparation should include stripping of any surficial vegetation and organic soils. Based on conditions encountered at the time of the subsurface exploration, stripping of native

grass and weed growth is expected to be necessary. These materials should be disposed of offsite. Significant topsoil/rootmat material, was encountered at the ground surface at Boring No. B-5, extending to a depth of up to 6± inches. Removal of trees should include the associated root masses. Initial site stripping should also include the minor amounts of trash and debris that were observed on the subject site. The actual extent of site stripping should be determined in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered.

Demolition of the single family residence structures in the southern portion of the site will be necessary in order to facilitate the construction of the proposed development. Demolition should include all foundations, floor slabs, utilities and any other subsurface improvements that will not remain in place with the new development. Demolition debris should be disposed of off-site in accordance with any applicable regulations. Alternatively, concrete and asphalt debris may be crushed to a maximum 2-inch particle size, mixed with the on-site soils, and reused as compacted structural fill.

Existing Soil Stockpiles

Several stockpiles of soil mixed with cobbles, boulders, concrete fragments, and other miscellaneous debris are present in the central portion of the site. Based on visual estimations, the stockpile diameters range between 30 and 160± feet, with estimated heights of 3 to 12± feet. Concrete fragments and debris should be disposed of offsite, or concrete may be crushed and reused in fills as described in the demolition section above. Oversized materials including cobbles and boulders should be disposed of offsite or placed in accordance with the recommendations for placement of oversized materials contained in the Grading Guide Specifications in Appendix D of this report. Provided that the soil stockpiles are cleaned of artificial debris and oversized rock materials, the existing stockpiled soils may be used as structural fill.

Treatment of Existing Soils: Building Pad

Remedial grading should be performed within the proposed building pad area in order to remove the existing potentially compressible/collapsible native alluvium. In general, it is recommended that the overexcavation extend to a depth of at least 3 feet below existing grade, and to a depth of at least 3 feet below proposed grade, whichever is greater. Within the influence zones of the new foundations, the overexcavation should extend to a depth of at least 2 feet below proposed foundation bearing grade.

Additional remedial grading will be necessary in the area of Boring No. B-6 where lower density, collapsible soils extend to depths of 7 to 8± feet. Boring No. B-7 (which is located outside of the proposed building area) also encountered loose younger alluvium, extending to a depth of 3± feet. Based on the conditions encountered at Boring Nos. B-6 and B-7, loose, collapsible younger alluvium is considered to be present in the southern portion of the southeast quadrant of the site. In these areas, overexcavation to depths on the order of 3 to 8± feet below the existing site grades may be necessary. The lateral extent of these lower density, collapsible soils should be determined at the time of site grading.

The overexcavation areas should extend at least 5 feet beyond the building perimeters, and to an extent equal to the depth of fill below the new foundations. If the proposed structure

incorporates any exterior columns (such as for a canopy or overhang) the area of overexcavation should also encompass these areas.

Following completion of the overexcavation, the subgrade soils within the overexcavation areas should be evaluated by the geotechnical engineer to verify their suitability to serve as the structural fill subgrade, as well as to support the foundation loads of the new structure. This evaluation should include proofrolling and probing to identify any soft, loose or otherwise unstable soils that must be removed. Some localized areas of deeper excavation may be required if additional fill materials or loose, porous, overly moist, or low density native soils are encountered at the base of the overexcavation.

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches and moisture conditioned or air dried to achieve a moisture content of 2 to 4 percent above optimum moisture content. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

The building pad area may then be raised to grade with previously excavated soils or imported, very low expansive structural fill. All structural fill soils present within the proposed building area should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of proposed retaining and non-retaining site walls should be overexcavated to a depth of at least 2 feet below foundation bearing grade and replaced as compacted structural fill. Additional overexcavation may be required in the area of Boring Nos. B-6 and B-7, as discussed above. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning and recompacting the upper 12 inches of exposed subgrade soils. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Parking Areas

Based on economic considerations, overexcavation of the alluvial soils in the new parking and drive areas is not considered warranted, with the exception of areas where lower strength, or unstable soils are identified by the geotechnical engineer during grading.

Subgrade preparation in the new parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations. The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. The subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 2 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength alluvial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within the proposed parking areas. The grading recommendations presented above do not completely mitigate the extent of existing undocumented fill soils and low strength alluvium in the parking

areas. As such, settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the parking and drive areas should be overexcavated to a depth of 2 feet below proposed pavement subgrade elevation, with the resulting soils replaced as compacted structural fill.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 2 to 4 percent above the optimum moisture content, and compacted.
- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer. It should be noted that some of the soils at this site currently possess moisture contents well above the anticipated optimum moisture content. **Therefore, some drying of these materials may be required in order to achieve a moisture content suitable for recompaction.**
- All grading and fill placement activities should be completed in accordance with the requirements of the CBC and the grading code of the county of Riverside.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. As an alternative, a clean sand (minimum Sand Equivalent of 30) may be placed within trenches and compacted in place (jetting or flooding is not recommended). Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the county of Riverside. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

6.4 Construction Considerations

Excavation Considerations

The near surface soils generally consist of sands and silty sands. These materials will likely be subject to minor caving within shallow excavations. Where caving occurs within shallow excavations, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, the inclination of temporary slopes should not exceed 1.5h:1v. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

As discussed in Section 4 of this report, very dense bedrock was encountered at three of the boring locations on the project site. At Boring No. B-5, bedrock was encountered at a depth of 3± feet below the existing site grade. Based on conditions encountered at the boring locations, it is expected that conventional grading equipment will be suitable to excavate these soils to the depths recommended in this report. However, large track mounted excavators, large track mounted dozers equipped with a ripping shank, or similar equipment may be required for excavation in areas with shallow bedrock, especially in areas where cuts exceed 3 to 5± feet into the bedrock.

Groundwater

The static groundwater table is considered to exist at a depth greater than 30± feet or more below existing grade. Therefore, groundwater is not expected to impact the grading or foundation construction activities.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pad will be underlain by newly placed structural fill soils extending to depths of at least 2 feet below foundation bearing grade. Based on this subsurface profile, the proposed structures may be supported on shallow foundations.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 2,500 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom).

- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 18 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.

- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressures presented above may be increased by 1/3 when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on standard geotechnical practice. Additional rigidity may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill compacted at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to 2 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential static settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively, under static conditions. Differential movements are expected to occur over a 30-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill soils. The maximum allowable passive pressure is 2,500 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floor of the proposed structure may be constructed as a conventional slab-on-grade, supported on newly placed structural fill (or densified existing soils), extending to a depth of at least 3 feet below finished pad grade. Based on geotechnical considerations, the floor slabs may be designed as follows:

- Minimum slab thickness: 6 inches.

- Modulus of Subgrade Reaction: 125 psi/in.

- Minimum slab reinforcement: Reinforcement is not required for expansive soil conditions. However, slab reinforcement may be required for structural design considerations. The actual floor slab reinforcement should be determined by the structural engineer, based upon the imposed loading.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire area of the proposed slab. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.

- Moisture condition the floor slab subgrade soils to 2 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slab should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

Although not indicated on the site plan, some small (less than 6 feet in height) retaining walls may be required to facilitate the new site grades. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. The on-site soils generally consist of silty sands. Based on their classifications, the silty sand materials are expected to possess a friction angle of at least 30 degrees when compacted to 90 percent of the ASTM-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		**Soil Type** On-Site Silty Sands
Internal Friction Angle (ϕ)		30°
Unit Weight		120 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	40 lbs/ft^3
	Active Condition (2h:1v backfill)	65 lbs/ft^3
	At-Rest Condition (level backfill)	60 lbs/ft^3

Regardless of the backfill type, the walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive

resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the 2013 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. If walls 6 feet or more are required for this site, the geotechnical engineer should be contacted for supplementary seismic lateral earth pressure recommendations.

Retaining Wall Foundation Design

The retaining wall foundations should be supported within newly placed compacted structural fill, extending to a depth of at least 2 feet below proposed foundation bearing grade. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site soils may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls be used. If the drainage composite material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The drainage composite should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 4-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 8-foot on-center spacing. The weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

Weep holes or a footing drain will not be required for building stem walls.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The on-site soils generally consist of silty sands and based on the results of R-value testing, these materials to possess an R-value of 60. Therefore the subsequent pavement design is based upon an R-value of 60. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering controlled conditions. It is recommended that additional R-value testing be performed after completion of rough grading to verify the pavement support characteristics of the pavement subgrades following site grading.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20 year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R = 60)				
Materials	**Thickness (inches)**			
	Automobile Parking and Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic		
		(TI = 6.0)	(TI = 7.0)	(TI = 8.0)
Asphalt Concrete	3	3½	4	5
Aggregate Base	3	3	3	3
Compacted Subgrade	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS			
Materials	**Thickness (inches)**		
	Autos Parking and Light Truck Traffic (TI = 5.0 & 6.0)	Truck Traffic	
		(TI = 7.0)	(TI = 8.0)
PCC	5	6½	7½
Compacted Subgrade (95% minimum compaction)	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness.

7.0 GENERAL COMMENTS

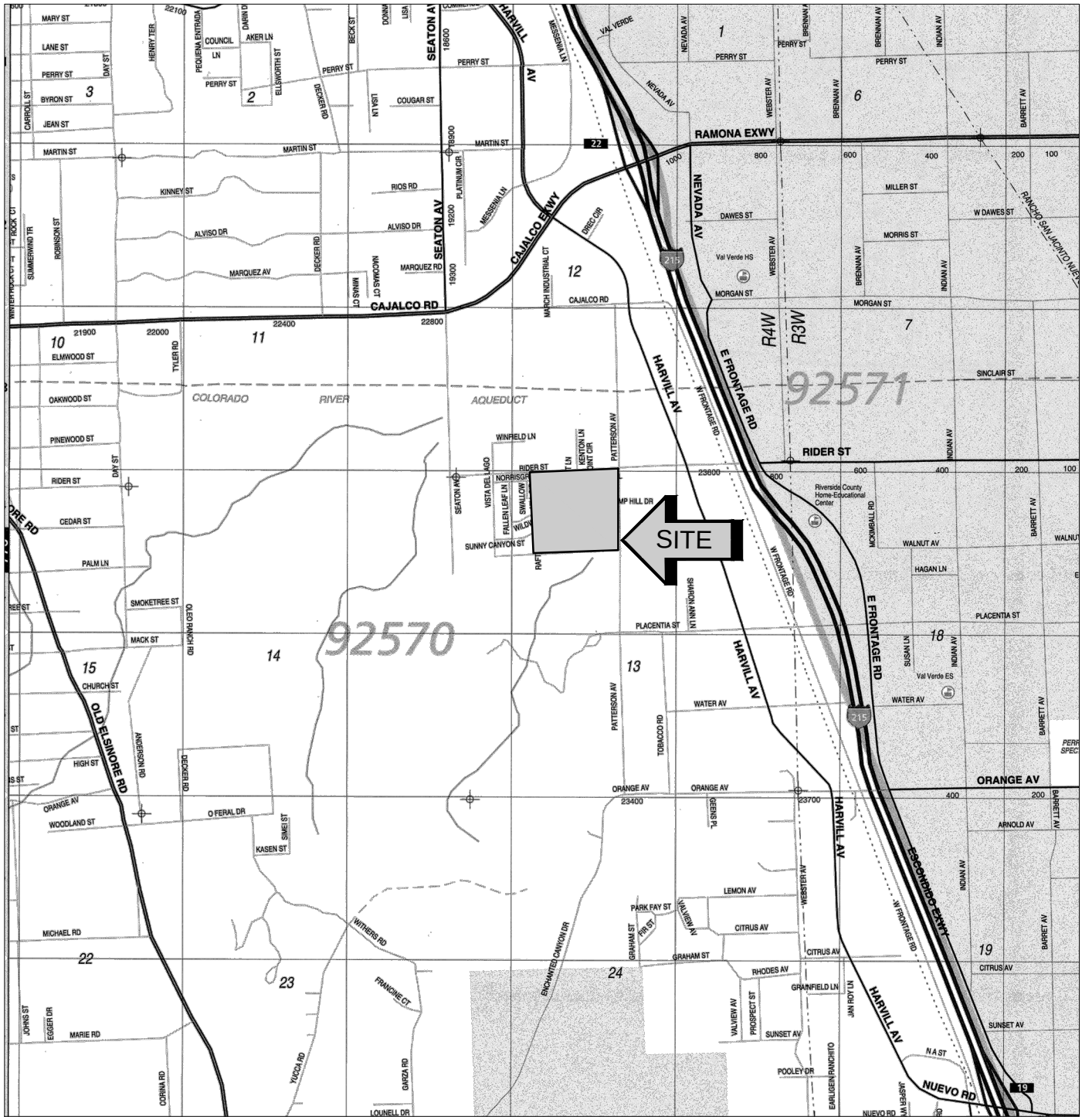
This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

APPENDIX A



SOURCE: RIVERSIDE COUNTY
THOMAS GUIDE, 2013

SITE LOCATION MAP

PROPOSED INDUSTRIAL FACILITY

RIVERSIDE COUNTY, CALIFORNIA

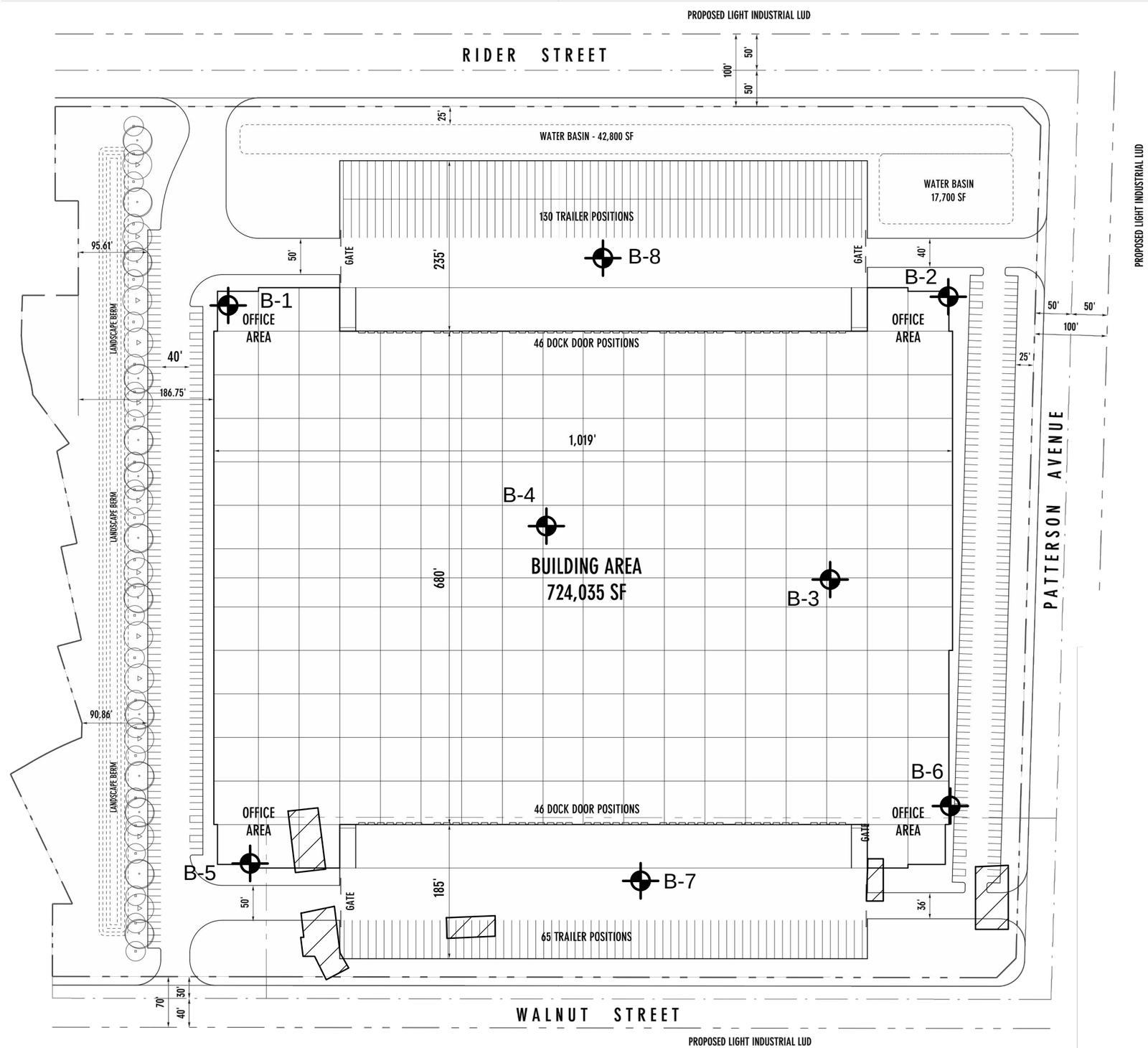
SCALE: 1" = 2400'

DRAWN: JL
CHKD: JAS

SCG PROJECT
16G116-1

PLATE 1

SOUTHERN CALIFORNIA GEOTECHNICAL



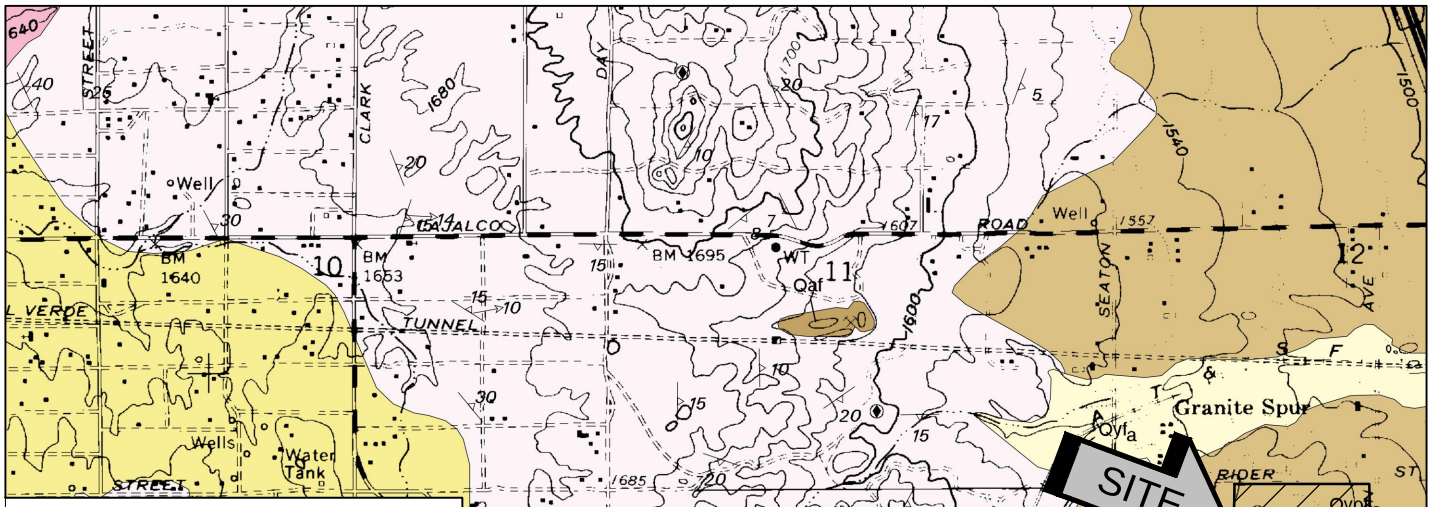
GEOTECHNICAL LEGEND

APPROXIMATE BORING LOCATION

EXISTING RESIDENCES TO BE DEMOLISHED

NOTE: BASE SITE MAP PREPARED BY RGA.

BORING LOCATION PLAN	
PROPOSED INDUSTRIAL FACILITY	
RIVERSIDE COUNTY, CALIFORNIA	
SCALE: 1" = 150'	SOUTHERN CALIFORNIA GEOTECHNICAL
DRAWN: JL CHKD: JAS	
SCG PROJECT 16G116-1	
PLATE 2	



DESCRIPTION OF MAP UNITS

VERY YOUNG SURFICIAL DEPOSITS—Sediment recently transported and deposited in channels and washes, on surfaces of alluvial fans and alluvial plains, and on hillslopes. Soil-profile development is non-existant. Includes:

Qaf — **Artificial fill (late Holocene)—**Deposits of fill resulting from human construction; restricted to construction activities on March Air Force Base in northeastern part of quadrangle and Colorado River aqueduct construction near Cajalco Road.

YOUNG SURFICIAL DEPOSITS—Sedimentary units that are slightly consolidated to cemented and slightly to moderately dissected. Alluvial fan deposits (Qyf series) typically have high coarse:fine clast ratios. Younger surficial units have upper surfaces that are capped by slight to moderately developed pedogenic-soil profiles (A/C to A/AC/$B_{cambric}C_{ox}$ profiles). Includes:

Qyw — **Young alluvial wash deposits (Holocene and late Pleistocene)—**Sand and gravelly sand deposits; unconsolidated. Restricted to drainage roughly followed by Cajalco Road

Qyf — **Young alluvial fan deposits (Holocene and late Pleistocene)—**Gray-hued arkosic, sandy and gravel-sand deposits derived from local Peninsular Ranges batholith granitic bodies. Limited distribution along eastern and western edges of quadrangle

Qya — **Young axial channel deposits (Holocene and late Pleistocene)—**Gray, unconsolidated alluvium consisting of medium- to fine-grained sand and lesser gravel and silt. Found 2 km southwest of Perris, and in western part of quadrangle, east of Gavilan Road

OLD SURFICIAL DEPOSITS—Sedimentary units that are moderately consolidated and slightly to moderately dissected. Older surficial deposits have upper surfaces that are capped by moderately to well-developed pedogenic soils (A/AB/B/C_{ox} profiles and Bt horizons as much as 1 to 2 m thick and maximum hues in the range of 10YR 5/4 and 6/4 through 7.5YR 6/4 to 4/4 and mature Bt horizons reaching 5YR 5/6). Includes:

Qof — **Old alluvial fan deposits (late to middle Pleistocene)—**Indurated, sandy alluvial fan deposits, locally contains matrix supported gravel. Widely distributed in southern part of quadrangle. Most of unit is slightly to moderately dissected and reddish-brown. Some Qof includes thin, discontinuous surface layer of Holocene alluvial fan material

Qoa — **Old axial channel deposits (late to middle Pleistocene)—**Alluvial deposits consisting mainly of sand, but containing minor gravel and silt. Gray to reddish-brown, unconsolidated to indurated. Generally slightly dissected.

Qov — **Old alluvial valley deposits (late to middle Pleistocene)—**Fluvial deposits along valley floors. Consists of moderately indurated, slightly dissected, sandy alluvium, containing lesser silt, and clay-bearing alluvium. In some areas, unit includes thin alluvial deposits of Holocene age. Restricted to Gavilan Plateau area in western part of quadrangle

VERY OLD SURFICIAL DEPOSITS—Sediments that are slightly to well consolidated to indurated, and moderately to well dissected. Upper surfaces are capped by moderate to well developed pedogenic soils (A/AB/B/C_{ox} profiles having Bt horizons as much as 2 to 3 m thick and maximum hues in the range 7.5YR 6/4 and 4/4 to 2.5YR 5/6)

Qvof — **Very old alluvial fan deposits (early Pleistocene)—**Mostly well-dissected, well-indurated, reddish-brown sand deposits. Commonly contains duripans and locally silcretes. Covers large areas adjacent to U.S. Highway 215 in northeastern part of quadrangle and flanking drainage followed by Cajalco Road

Qvoa — **Very old axial channel deposits (early Pleistocene)—**Gravel, sand, and silt; reddish-brown, well-indurated, surfaces well-dissected. Extensively developed in and south of Mead Valley

Tlm — **Lake Mathews Formation (Miocene)—**Mudstone, minor conglomerate, and poorly bedded sandstone; massively bedded, nonmarine. Restricted to small area along Mockingbird Canyon Road along western edge of quadrangle

Tcgr — **Rhyolite-clast conglomerate of Lake Mathews area (Miocene?)—**Cobble conglomerate; coarse-grained sandstone matrix, massively bedded, indurated. Cobble clasts are exotic red rhyolite. Exposed over small area near Lake Mathews Drive along western edge of quadrangle

Tcg — **Conglomerate in the Lake Mathews area (Miocene?)—**Cobble conglomerate; coarse-grained sandstone matrix, massively bedded, indurated. Lacks red rhyolite clasts of Tcgr. Restricted to small area east of Gavilan Road in western part of quadrangle

Rocks of the Peninsular Ranges batholith

Val Verde pluton (Cretaceous)—Relatively uniform pluton composed of biotite-hornblende tonalite. Termed Perris quartz diorite by Dudley (1935), Val Verde tonalite by Osborn (1939), and included within Bonsall tonalite by Larsen (1948). Name Val Verde adopted by Morton (1999) based on detailed study of Osborn (1939) near Val Verde, a former settlement and railway siding midway between Perris and Riverside. Apparently steep-walled Val Verde pluton is eroded to mid-pluton level. Emplacement age of the pluton is 105.7 Ma_{ish}. $^{40}Ar/^{39}Ar$ age of hornblende is 100 Ma, biotite 95 Ma and potassium feldspar 88.5 Ma. Includes:

Kvt — **Val Verde tonalite—**Gray-weathering, relatively homogeneous, massive- to well-foliated, medium- to coarse-grained, hypautomorphic-granular biotite-hornblende tonalite; principal rock type of Val Verde pluton. Contains subequal biotite and hornblende, quartz and plagioclase. Potassium feldspar generally less than two percent of rock. Where present, foliation typically strikes northwest and dips moderately to steeply northeast. Northern part of pluton contains younger, intermittently developed, northeast-striking foliation. In central part of pluton, tonalite is mostly massive, and contains few segregational masses of mesocratic to melanocratic tonalite. Elliptical- to pancake-shaped, meso-to melanocratic inclusions are common

Kvtk — **Potassium feldspar-bearing tonalite—**Biotite-hornblende tonalite; contains small amounts of potassium feldspar, heterogeneous, occurs as a selvage along part of the western contact.

Kvti — **Inclusion-rich tonalite—**Tonalite; contains abundant melanocratic inclusions, most with compositionally gradational borders. Forms medium- and small-size masses in Val Verde tonalite in northern part of quadrangle

Kgr — **Granophyre (Cretaceous)—**Gray, aphanitic to very fine-grained, granophyric textured granitic rock. Composed of granophyric intergrowths of quartz and alkali feldspars. Contains some fine-grained pyrite which oxidizes to give rock rusty appearance. Restricted to

SOURCE: "GEOLOGIC MAP OF THE STEELE PEAK 7.5' QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA" BY DOUGLAS M. MORTON, 2001

GEOLOGIC MAP

PROPOSED INDUSTRIAL FACILITY

RIVERSIDE COUNTY, CALIFORNIA

SCALE: 1" = 2000'

DRAWN: JL
CHKD: JAS

SCG PROJECT
16G116-1

PLATE 3

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 16G116
PROJECT: Industrial Facility
LOCATION: Riverside County, California

DRILLING DATE: 2/19/16
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH: Dry
CAVE DEPTH: 17 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	55			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, trace calcareous nodules, little Clay, dense-damp to moist	102	32					
	X	46			Light Brown Silty fine to medium Sand, trace calcareous veining, medium dense to dense-damp	92	26					
5	X	37				94	26					
	X	26			Brown Silty fine Sand, little to some medium Sand, trace calcareous veining, medium dense to dense-damp	87	31					
10	X	67				99	30					
	X	77/9"			@ 14 to 14½ feet, very dense	91	27					
15					WEATHERED BEDROCK (Kvt): Light Gray Brown Tonalite, friable, highly weathered, very dense-damp							
	X	50/3"					21					
20					Boring Terminated at 20'							

TBL 16G116.GPJ SOCALGEO.GDT 3/9/16

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 16G116
PROJECT: Industrial Facility
LOCATION: Riverside County, California

DRILLING DATE: 2/19/16
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH: Dry
CAVE DEPTH: 25 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	57			OLDER ALLUVIUM: Light Brown Silty fine to medium Sand, trace coarse Sand, trace to little Clay, trace calcareous veining, dense to very dense-dry to damp		28					
	X	36					23					
5												
	X	54										No Sample Recovered
	X	35					25					
10												
					Red Brown Clayey fine Sand to fine Sandy Clay, dense to hard-damp to moist							
	X	46	3.5				25					
15												
					Brown Silty fine Sand, little medium Sand, medium dense-damp							
	X	20					26					
20												
					Gray Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist							
	X	23					29					
25												
					WEATHERED BEDROCK (Kvt): Light Gray Brown Tonalite, friable, highly weathered, dense-damp							
	X	50/4"					22					
30												
					Boring Terminated at 30'							

TBL 16G116.GPJ SOCALGEO.GDT 3/9/16

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 16G116
PROJECT: Industrial Facility
LOCATION: Riverside County, California

DRILLING DATE: 2/19/16
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH: Dry
CAVE DEPTH: 11 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	50			OLDER ALLUVIUM: Gray Brown Silty fine to coarse Sand, little Clay, trace calcareous veining, dense-damp	101	29					EI = 18 @ 0 to 5'
	X	46			Brown Silty fine Sand, little medium to coarse Sand, little Clay, trace calcareous veining and nodules, dense to very dense-damp	95	29					
5	X	66				98	28					
	X	82				103	30					
10	X	63				96	25					
15	X	31/11"				101	24					
					Boring Terminated at 15'							

TBL 16G116.GPJ SOCALGEO.GDT 3/9/16

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 16G116
PROJECT: Industrial Facility
LOCATION: Riverside County, California

DRILLING DATE: 2/19/16
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH: Dry
CAVE DEPTH: 11 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	32			OLDERALLUVIUM: Brown Silty fine to coarse Sand, medium dense-damp to moist	99	24					
	X	36			Light Brown Silty fine Sand, trace medium to coarse Sand, trace calcareous veining, medium dense-damp to moist	95	29					
5	X	32				104	22					
	X	28				93	26					
	X	30			Light Brown Silty fine to coarse Sand, medium dense-damp	96	19					
10												
					Brown Silty fine Sand, trace medium Sand, very dense-damp to moist							
	X	73/11"				107	29					
15												
					Boring Terminated at 15'							

TBL 16G116.GPJ SOCALGEO.GDT 3/9/16

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 16G116
PROJECT: Industrial Facility
LOCATION: Riverside County, California

DRILLING DATE: 2/19/16
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH: Dry
CAVE DEPTH: 8.5 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					6± inches Topsoil							
	X	31			OLDER ALLUVIUM: Gray Brown fine to coarse Sand, trace Silt, dense-damp		21					
	X	79/11"			WEATHERED BEDROCK (Kvt): Light Gray Brown Tonalite, highly weathered, friable, very dense-damp		23					
5												
	X	50/4"					20					
	X	50/1"					20					
10												
					Boring Terminated at 10' due to very dense Bedrock							

TBL 16G116.GPJ SOCALGEO.GDT 3/9/16

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-6

JOB NO.: 16G116
PROJECT: Industrial Facility
LOCATION: Riverside County, California

DRILLING DATE: 2/19/16
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH: Dry
CAVE DEPTH: 13 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	23			ALLUVIUM: Light Brown Silty fine Sand, little medium to coarse Sand, medium dense-damp	93	23					
	X	28			Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp	91	23					
5	X	21			Brown Silty fine Sand, trace to little medium to coarse Sand, trace calcareous veining, medium dense-damp	84	25					
	X	18				86	25					
10	X	26				87	24					
15	X	20				87	25					
20	X	41				87	28					
					Boring Terminated at 20'							

TBL 16G116.GPJ SOCALGEO.GDT 3/9/16

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-7

JOB NO.: 16G116
PROJECT: Industrial Facility
LOCATION: Riverside County, California

DRILLING DATE: 2/19/16
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH: Dry
CAVE DEPTH: 2 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	9			ALLUVIUM: Brown Silty fine Sand, trace to little medium to coarse Sand, loose to medium dense-dry to damp		21					
	X	18					24					
5					Boring Terminated at 5'							

TBL 16G116.GPJ SOCALGEO.GDT 3/9/16

TEST BORING LOG

PLATE B-7

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-8

JOB NO.: 16G116
PROJECT: Industrial Facility
LOCATION: Riverside County, California

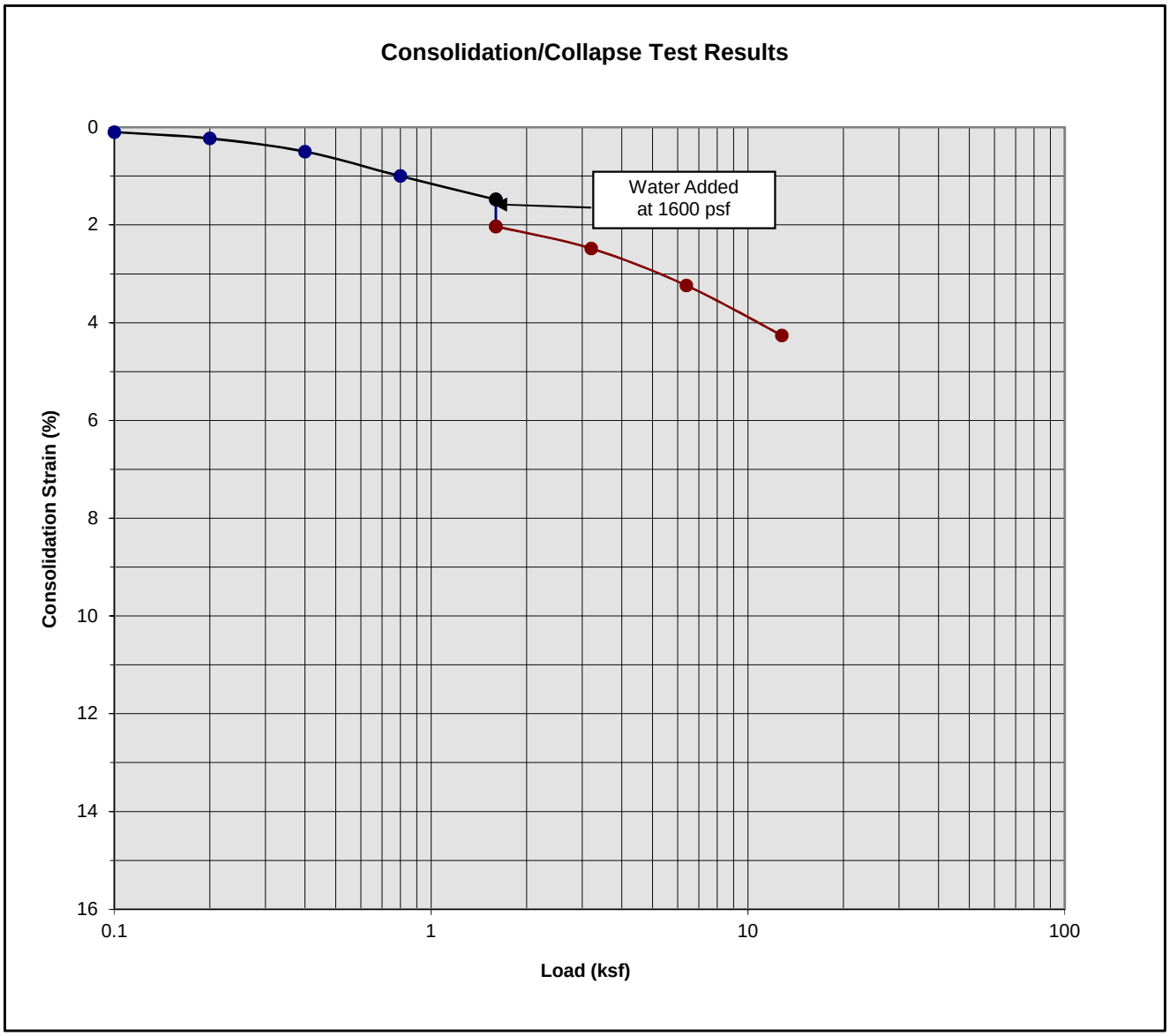
DRILLING DATE: 2/19/16
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Joseph Lozano Leon

WATER DEPTH: Dry
CAVE DEPTH: 3 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
	X	20			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp		23					
	X	22					24					
5					Boring Terminated at 5'							

TBL 16G116.GPJ SOCALGEO.GDT 3/9/16

APPENDIX C

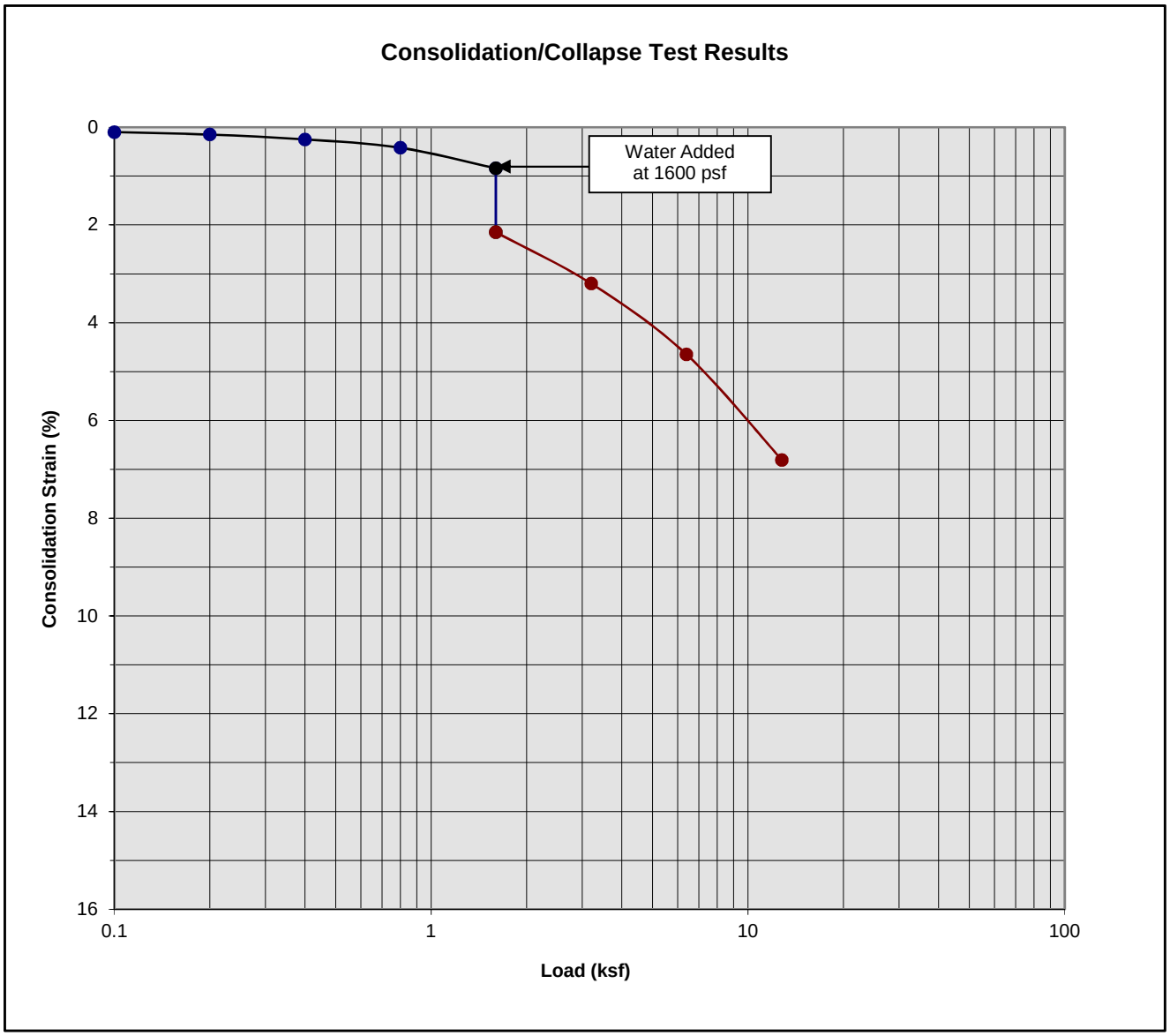


Classification: Brown Silty fine to medium Sand, trace coarse Sand

Boring Number:	B-1	Initial Moisture Content (%)	32
Sample Number:	---	Final Moisture Content (%)	37
Depth (ft)	1 to 2	Initial Dry Density (pcf)	101.6
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	105.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.55

Industrial Facility
Riverside County, California
Project No. 16G116
PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

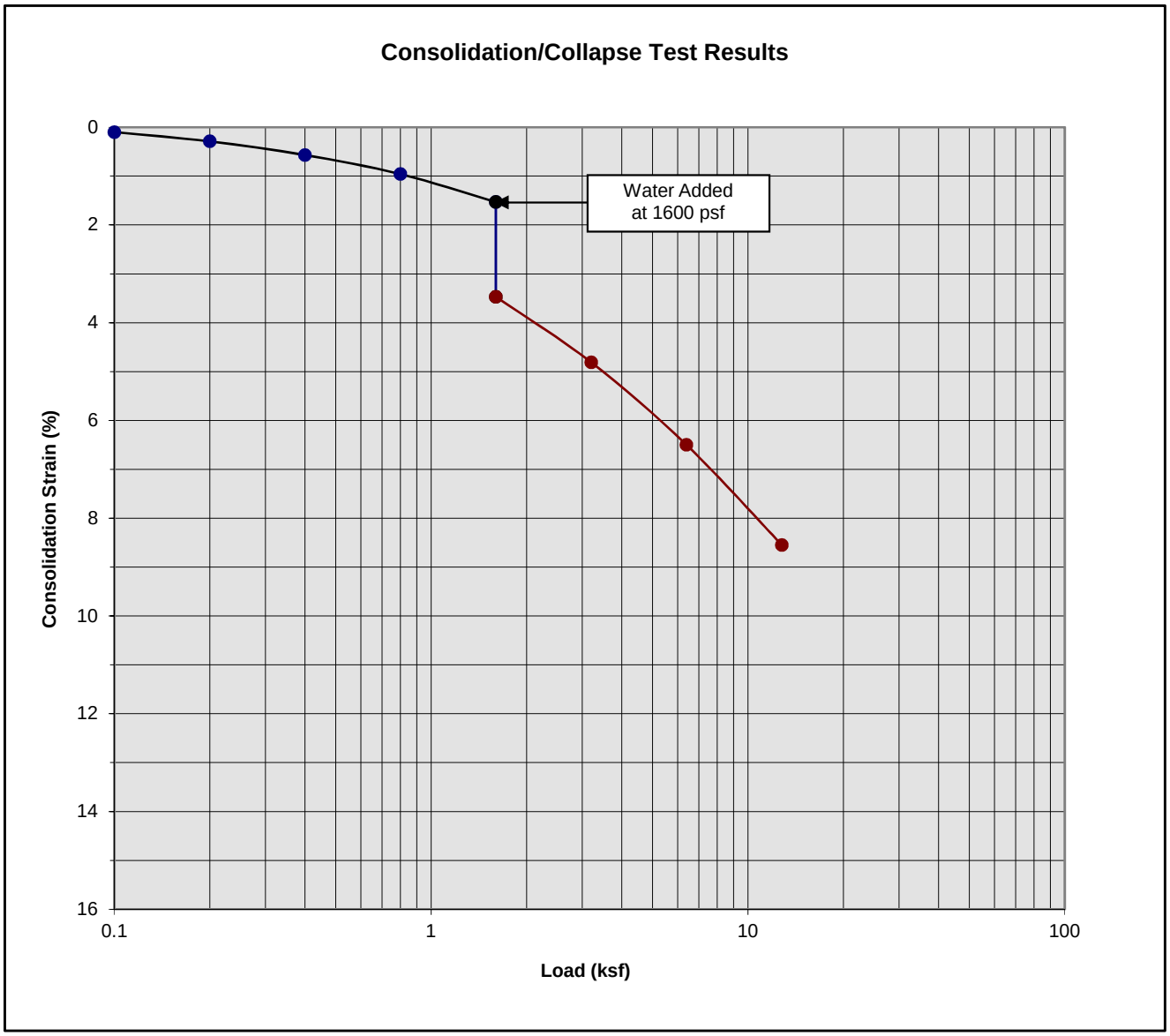


Classification: Light Brown Silty fine to medium Sand

Boring Number:	B-1	Initial Moisture Content (%)	26
Sample Number:	---	Final Moisture Content (%)	39
Depth (ft)	3 to 4	Initial Dry Density (pcf)	92.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	99.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.31

Industrial Facility
Riverside County, California
Project No. 16G116
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

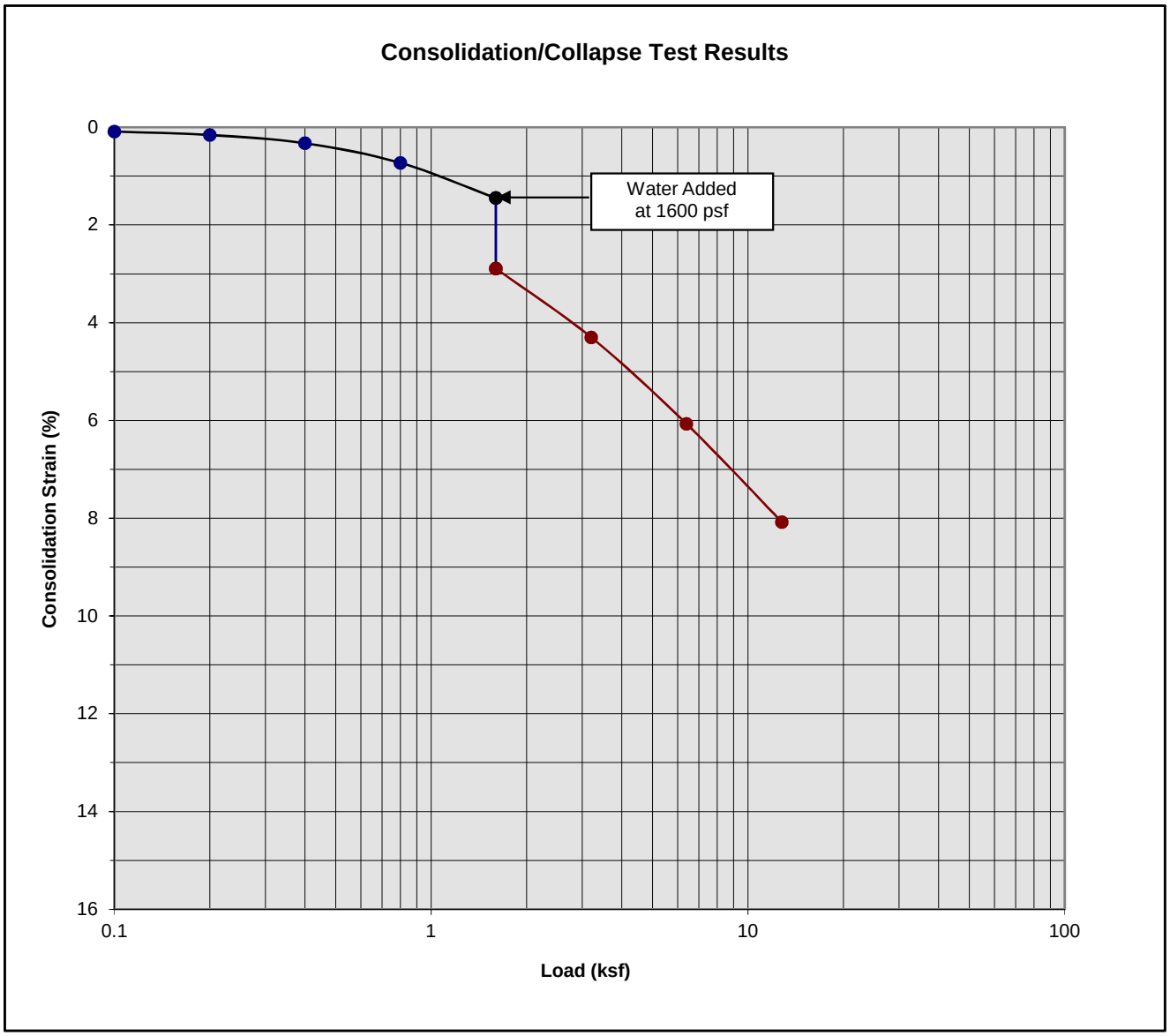


Classification: Light Brown Silty fine to medium Sand

Boring Number:	B-1	Initial Moisture Content (%)	26
Sample Number:	---	Final Moisture Content (%)	37
Depth (ft)	5 to 6	Initial Dry Density (pcf)	94.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	103.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.94

Industrial Facility
Riverside County, California
Project No. 16G116
PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

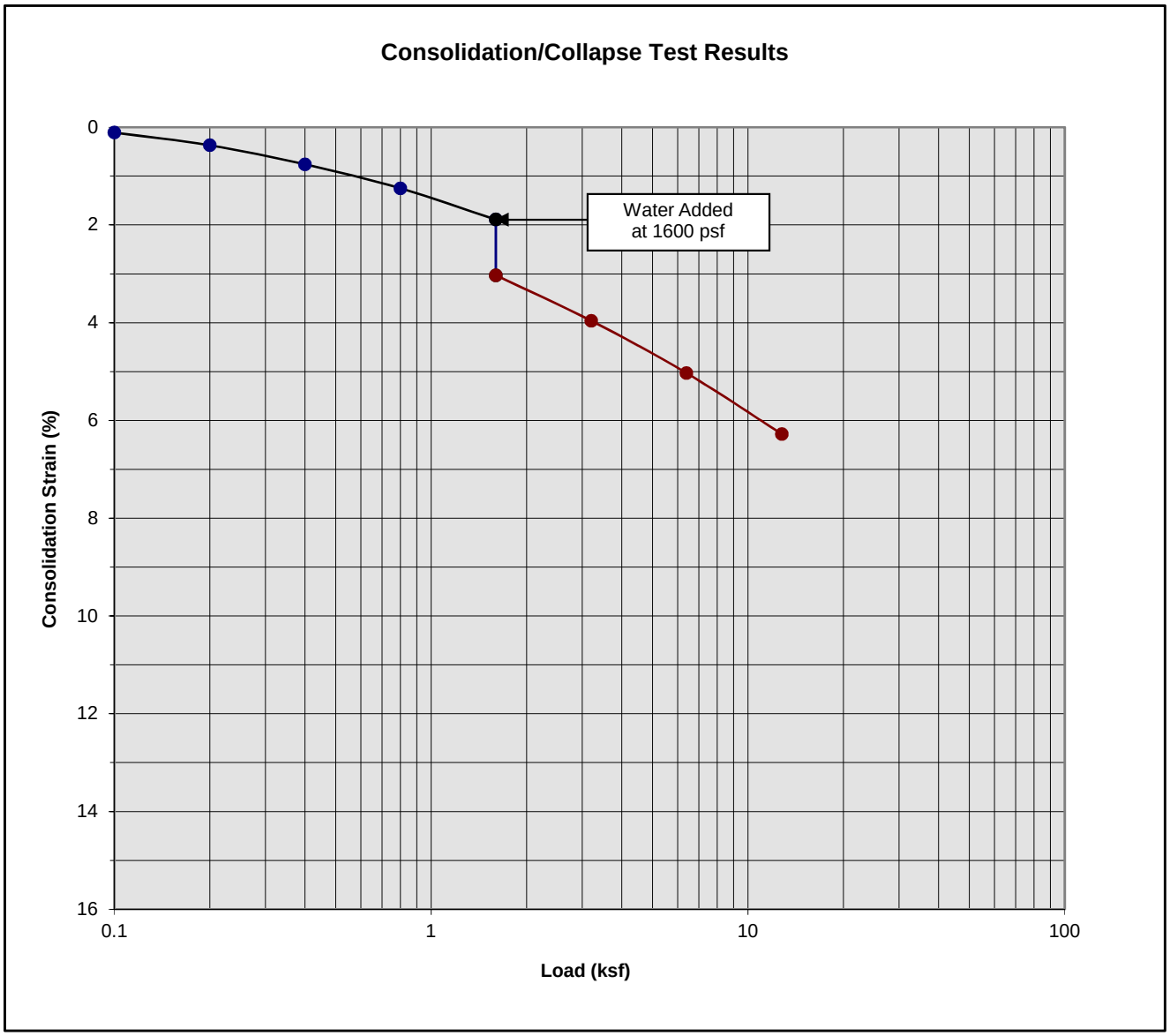


Classification: Brown Silty fine Sand, little to some medium Sand

Boring Number:	B-1	Initial Moisture Content (%)	31
Sample Number:	---	Final Moisture Content (%)	48
Depth (ft)	7 to 8	Initial Dry Density (pcf)	87.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	94.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.44

Industrial Facility
Riverside County, California
Project No. 16G116
PLATE C- 4

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

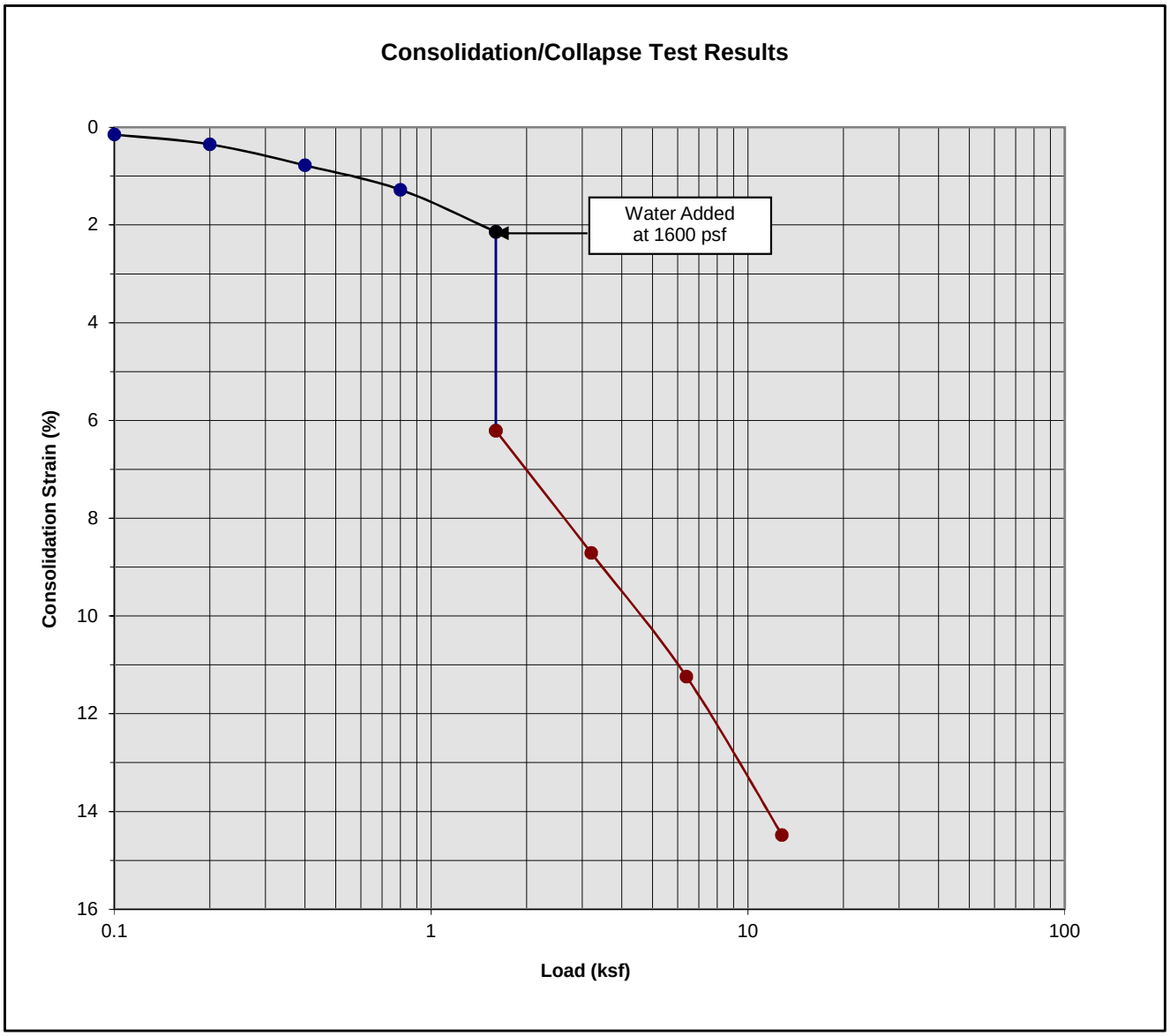


Classification: Light Brown Silty fine Sand, little medium to coarse Sand

Boring Number:	B-6	Initial Moisture Content (%)	23
Sample Number:	---	Final Moisture Content (%)	40
Depth (ft)	1 to 2	Initial Dry Density (pcf)	93.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	99.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.14

Industrial Facility
Riverside County, California
Project No. 16G116
PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

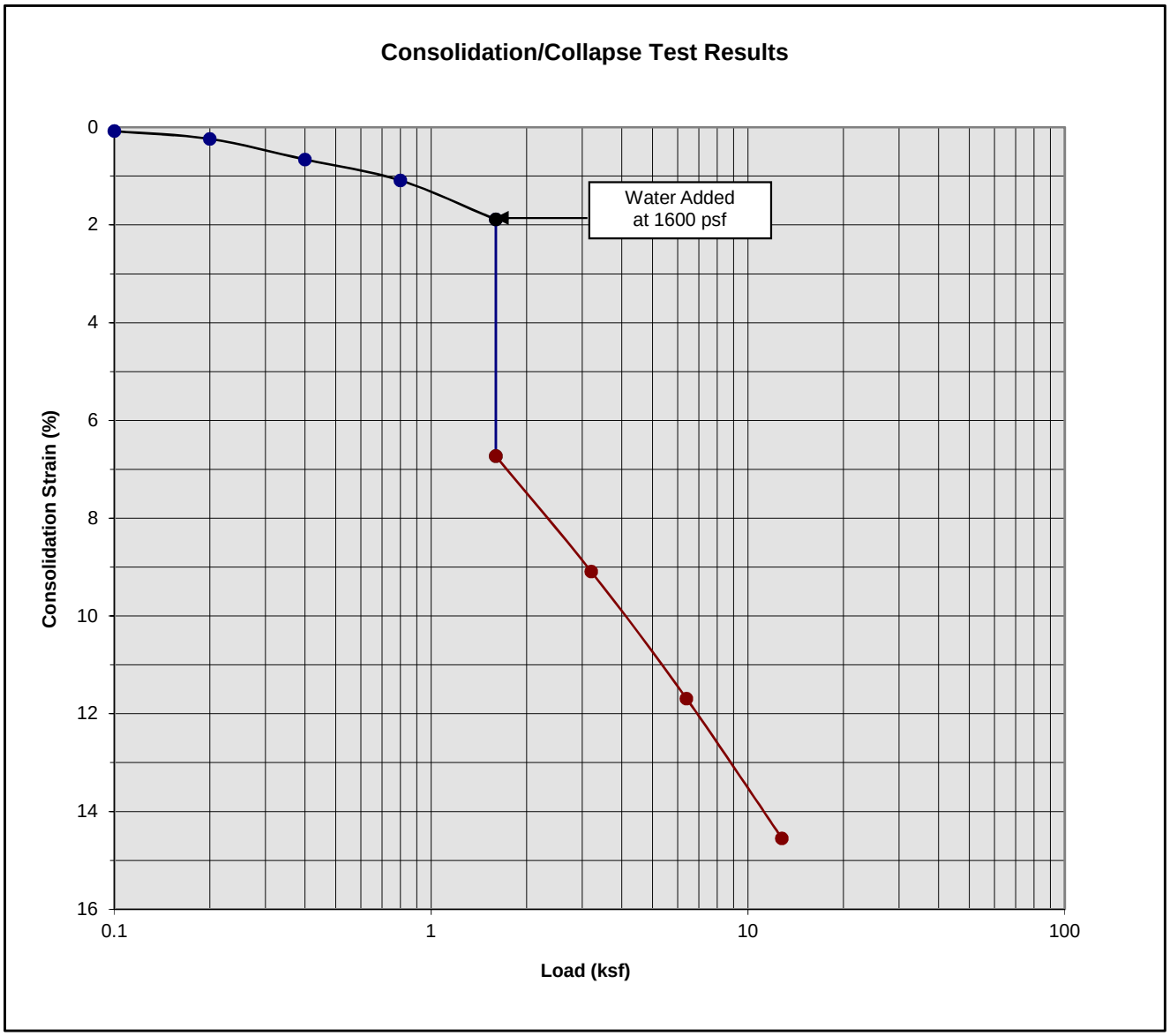


Classification: Brown Silty fine to medium Sand, trace coarse Sand

Boring Number:	B-6	Initial Moisture Content (%)	23
Sample Number:	---	Final Moisture Content (%)	38
Depth (ft)	3 to 4	Initial Dry Density (pcf)	90.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	106.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.07

Industrial Facility
Riverside County, California
Project No. 16G116
PLATE C- 6

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

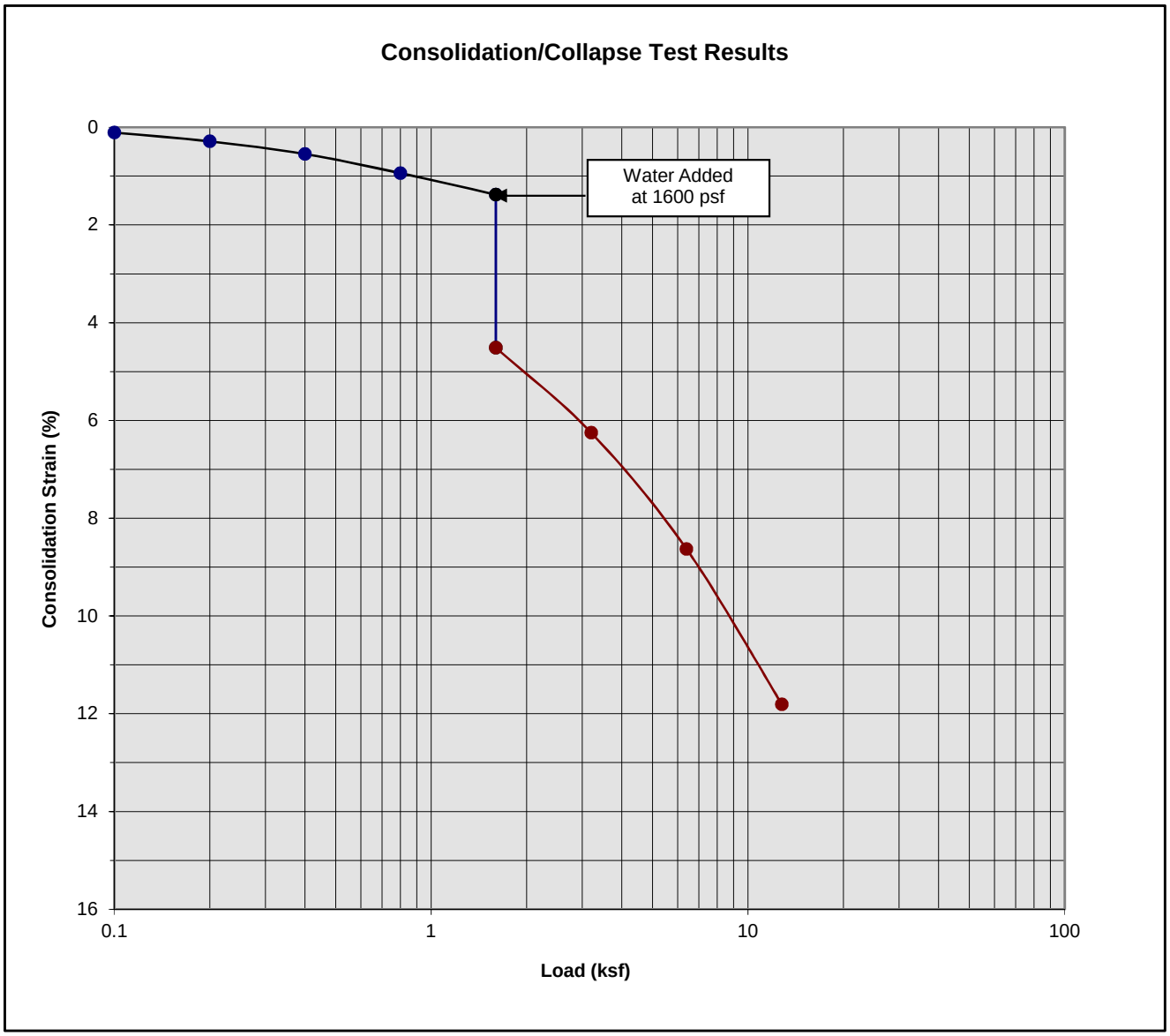


Classification: Brown Silty fine Sand, trace to little medium to coarse Sand

Boring Number:	B-6	Initial Moisture Content (%)	25
Sample Number:	---	Final Moisture Content (%)	38
Depth (ft)	5 to 6	Initial Dry Density (pcf)	84.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	99.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.84

Industrial Facility
Riverside County, California
Project No. 16G116
PLATE C- 7

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

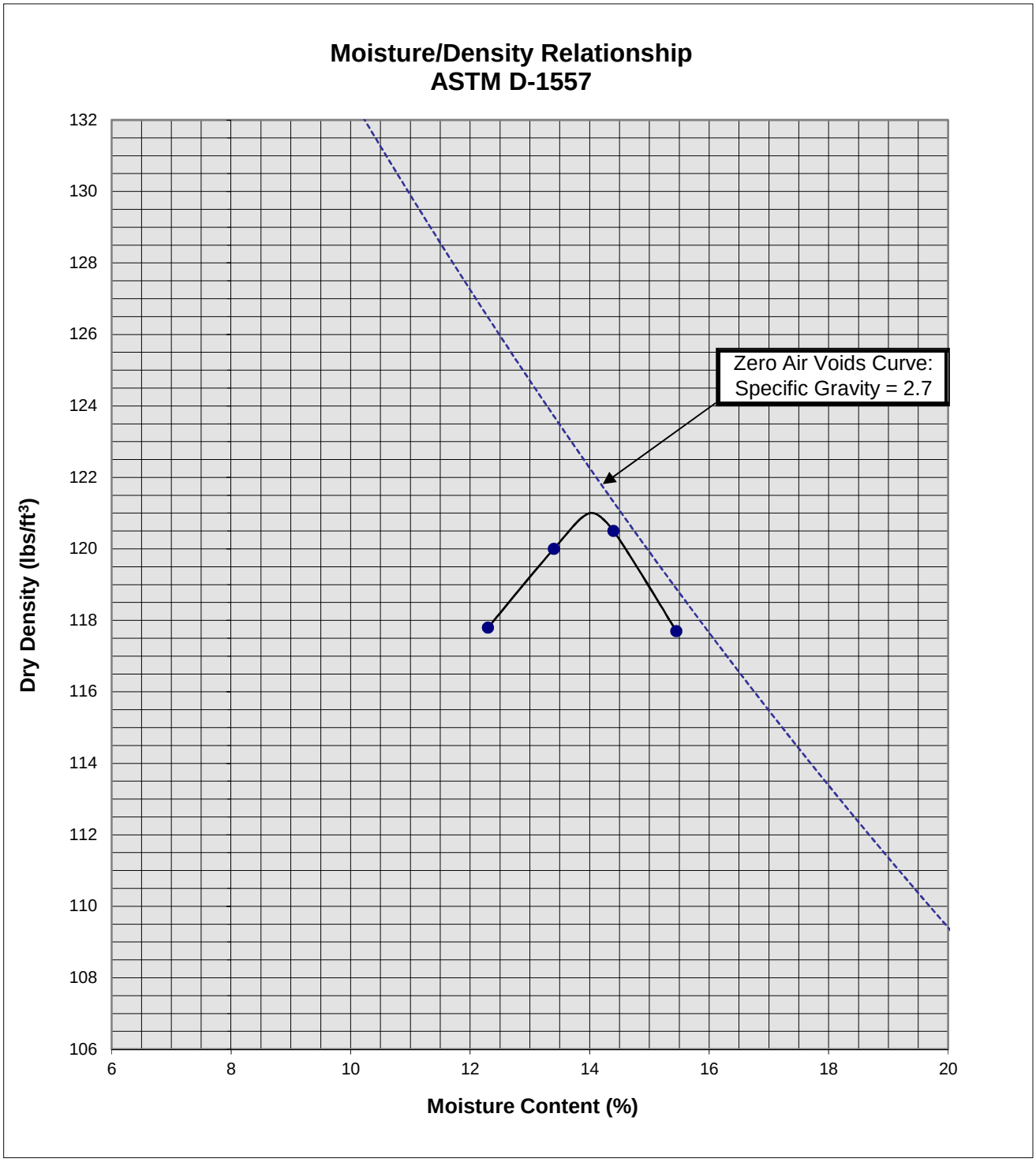


Classification: Brown Silty fine Sand, trace to little medium to coarse Sand

Boring Number:	B-6	Initial Moisture Content (%)	25
Sample Number:	---	Final Moisture Content (%)	39
Depth (ft)	7 to 8	Initial Dry Density (pcf)	86.2
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	97.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.13

Industrial Facility
Riverside County, California
Project No. 16G116
PLATE C- 8

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation



Soil ID Number	B-3 @ 0 to 5'
Optimum Moisture (%)	14
Maximum Dry Density (pcf)	121
Soil Classification	Light Brown Silty fine to medium Sand, little Clay

Industrial Facility
Riverside County, California
Project No. 16G116
PLATE C-9

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

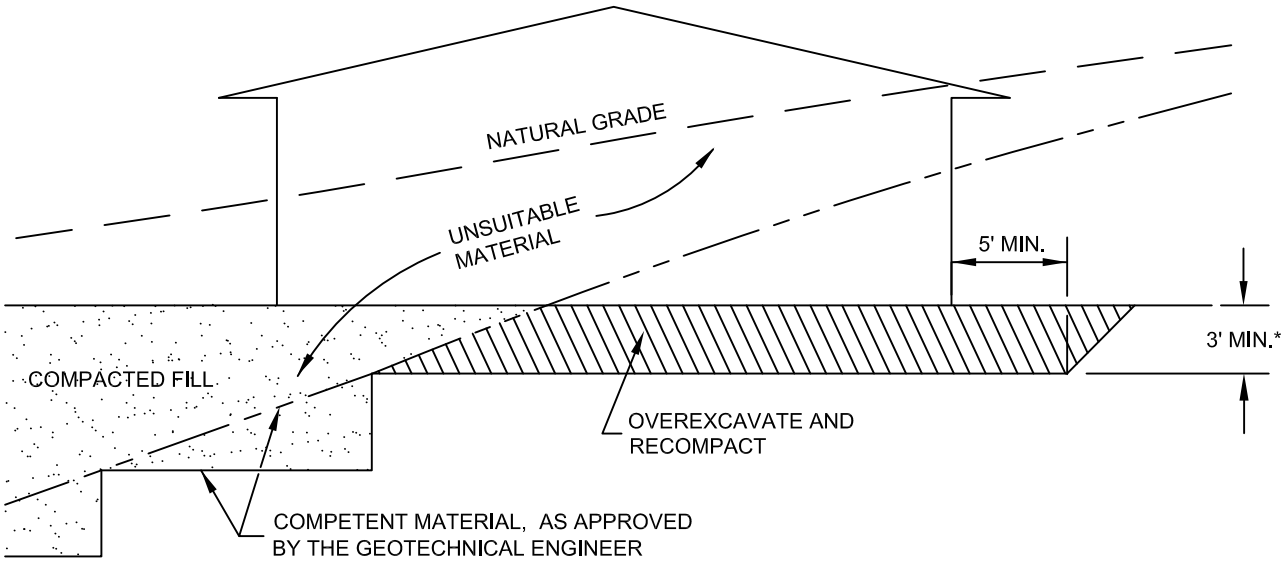
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

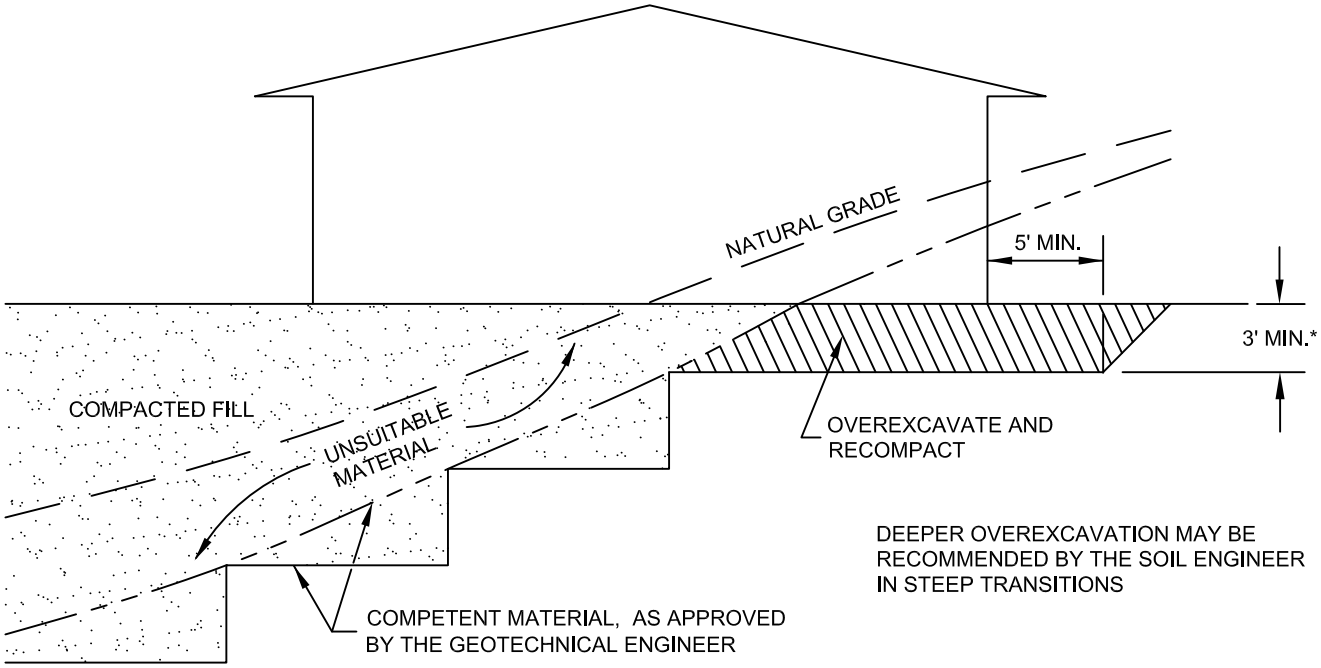
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

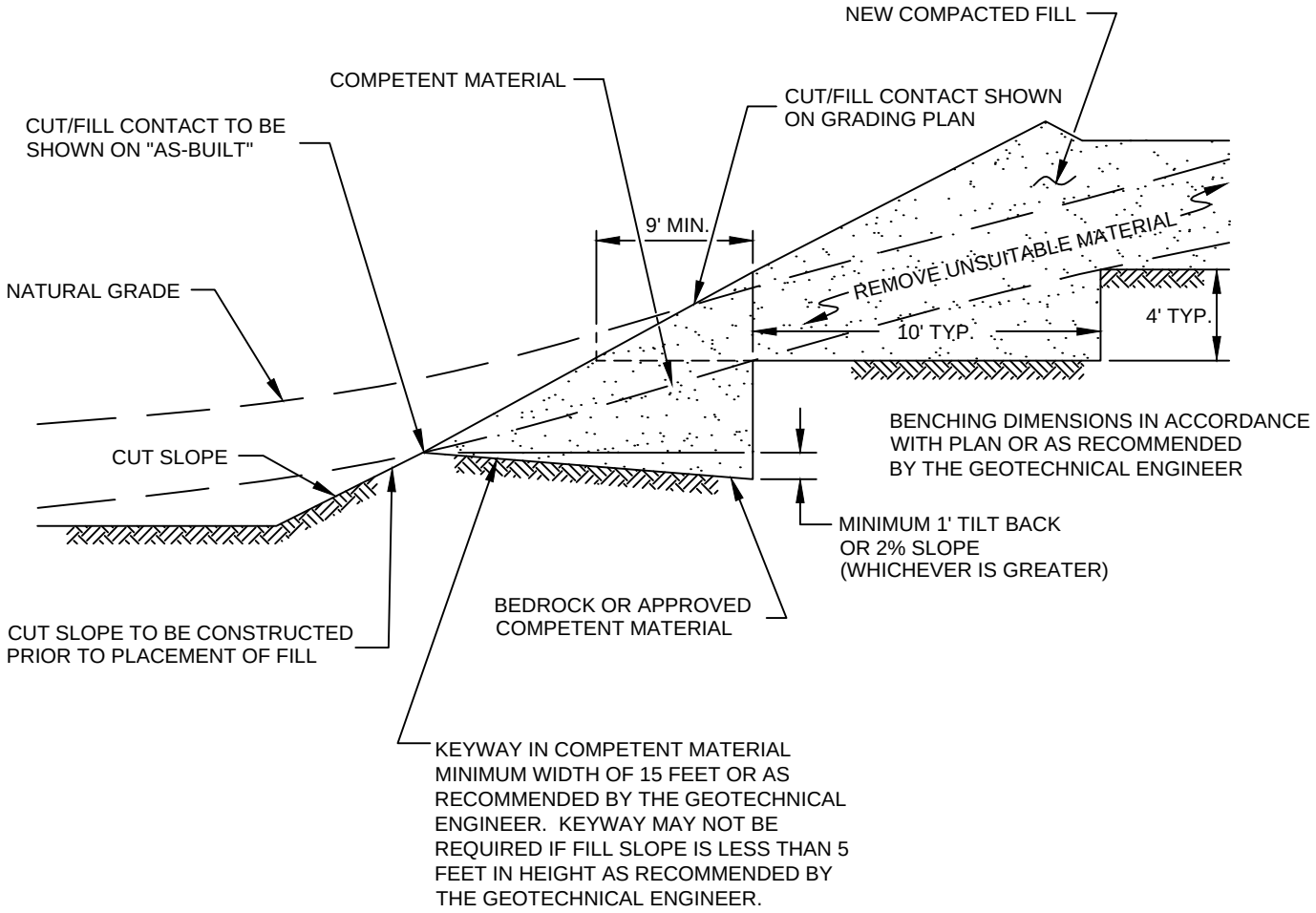
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

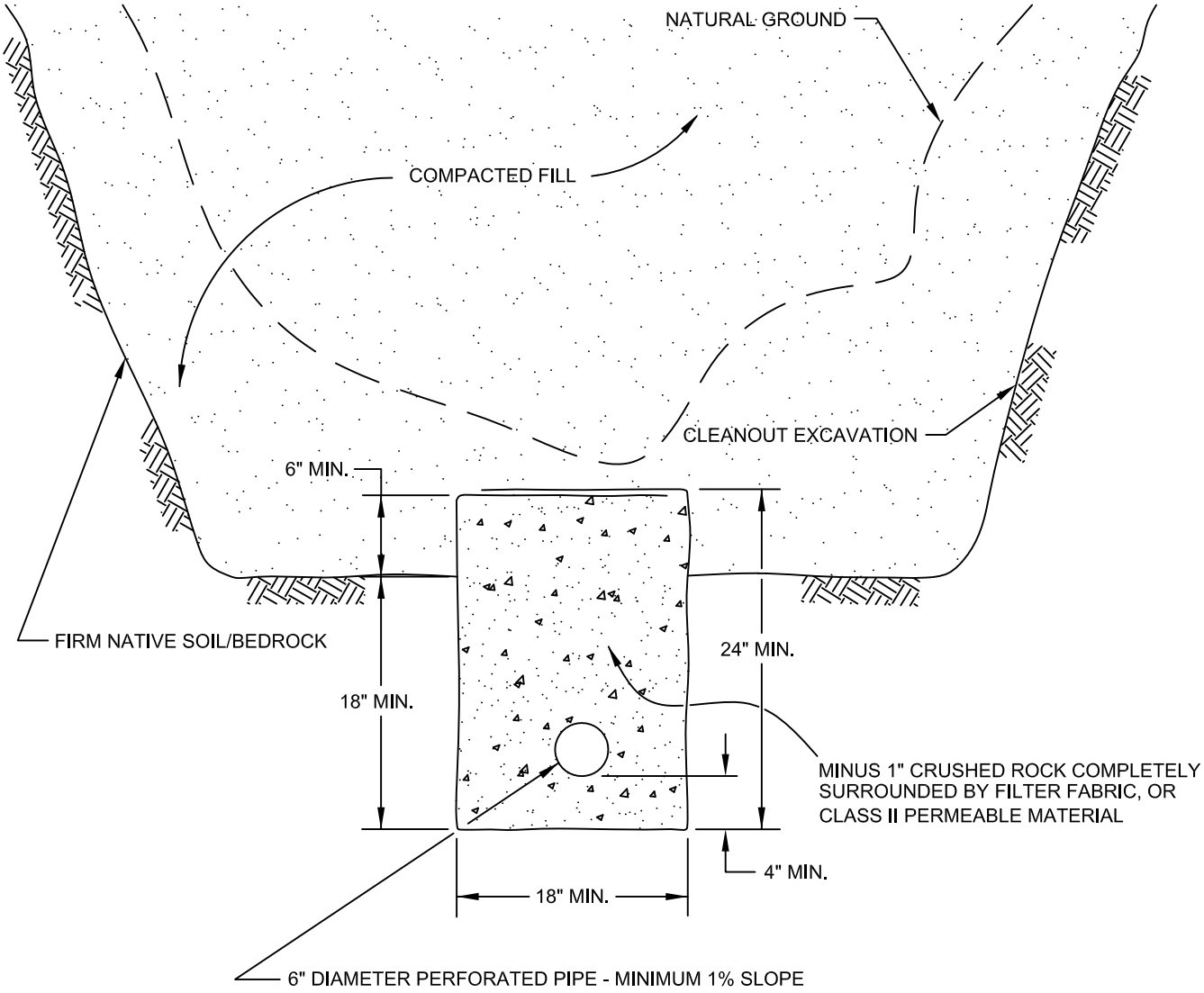
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL

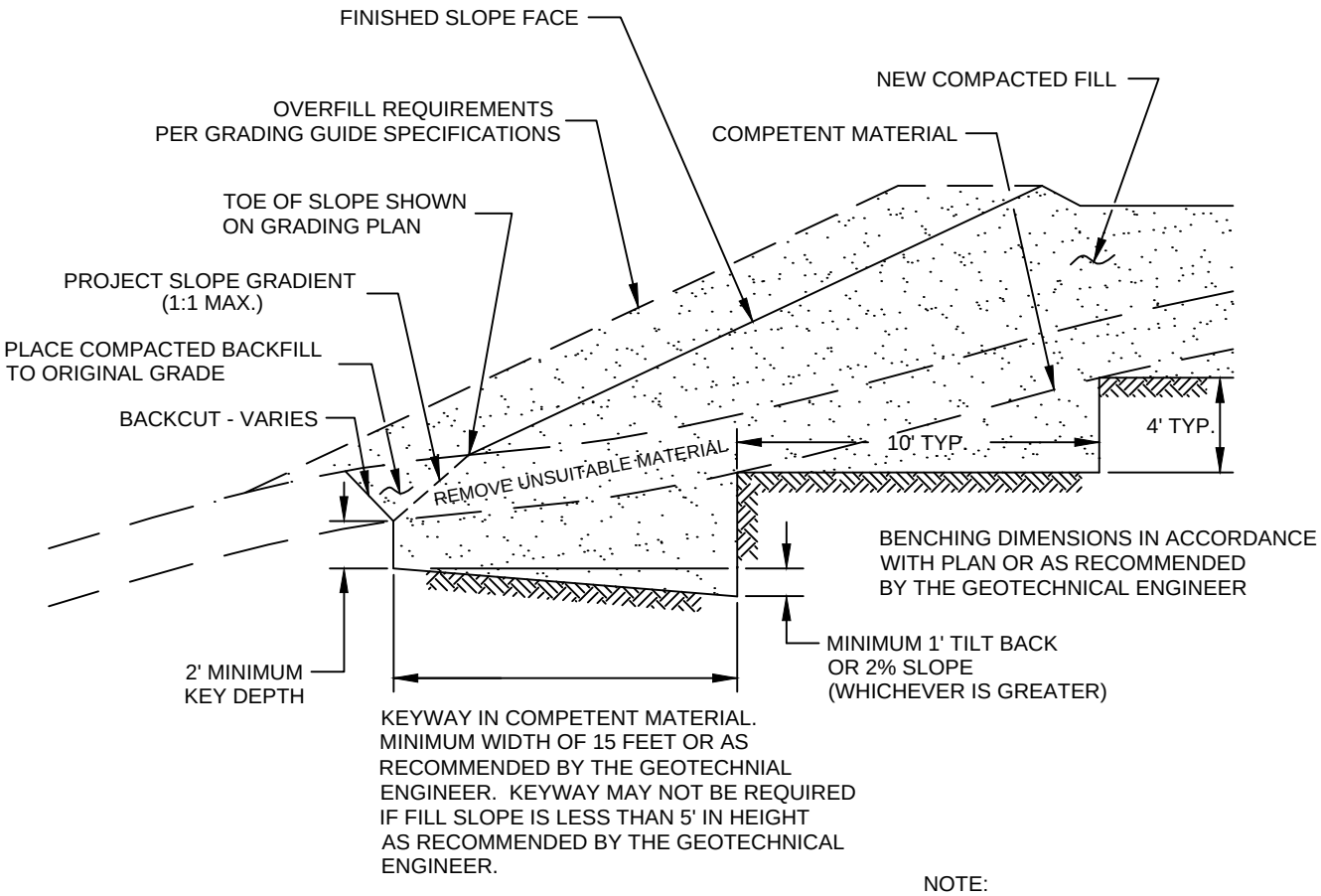
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-3

SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED
WHEN NATURAL SLOPES ARE
EQUAL TO OR STEEPER THAN 5:1
OR WHEN RECOMMENDED BY
THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

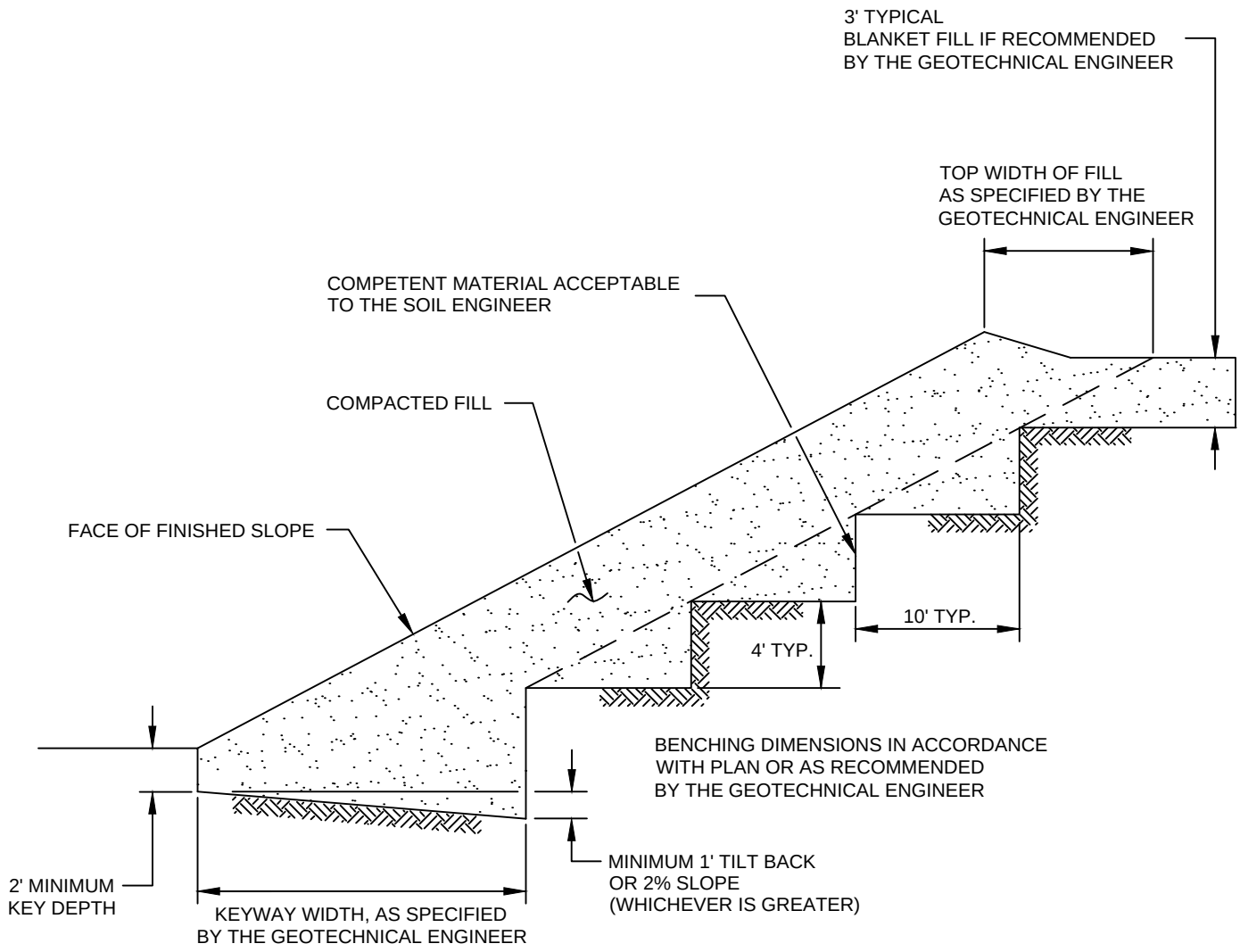
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

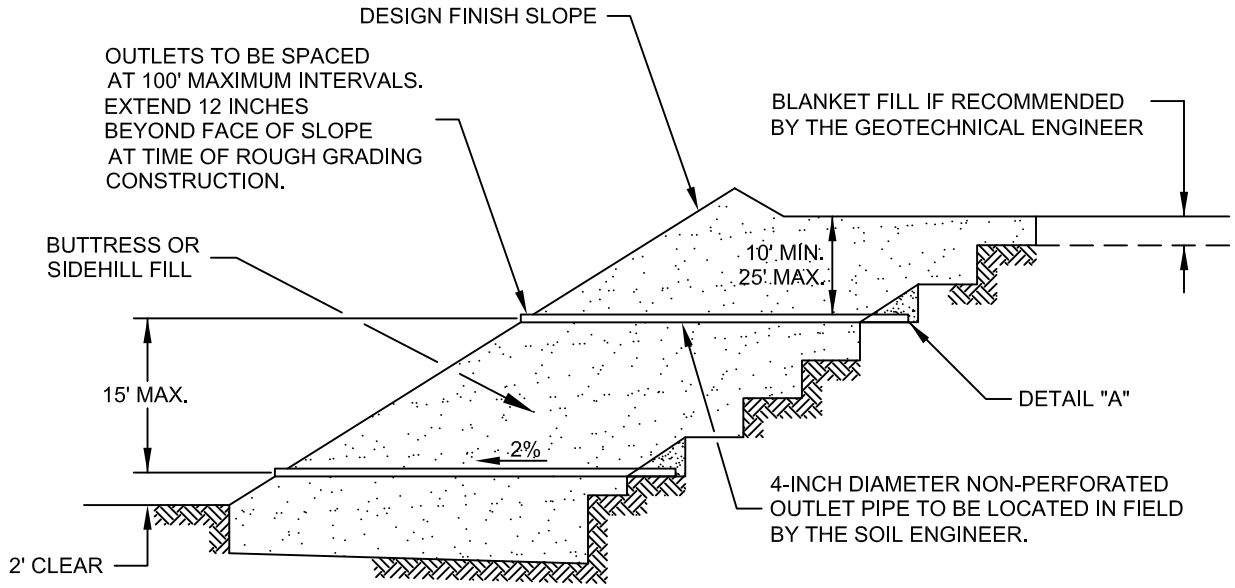
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SOUTHERN CALIFORNIA GEOTECHNICAL



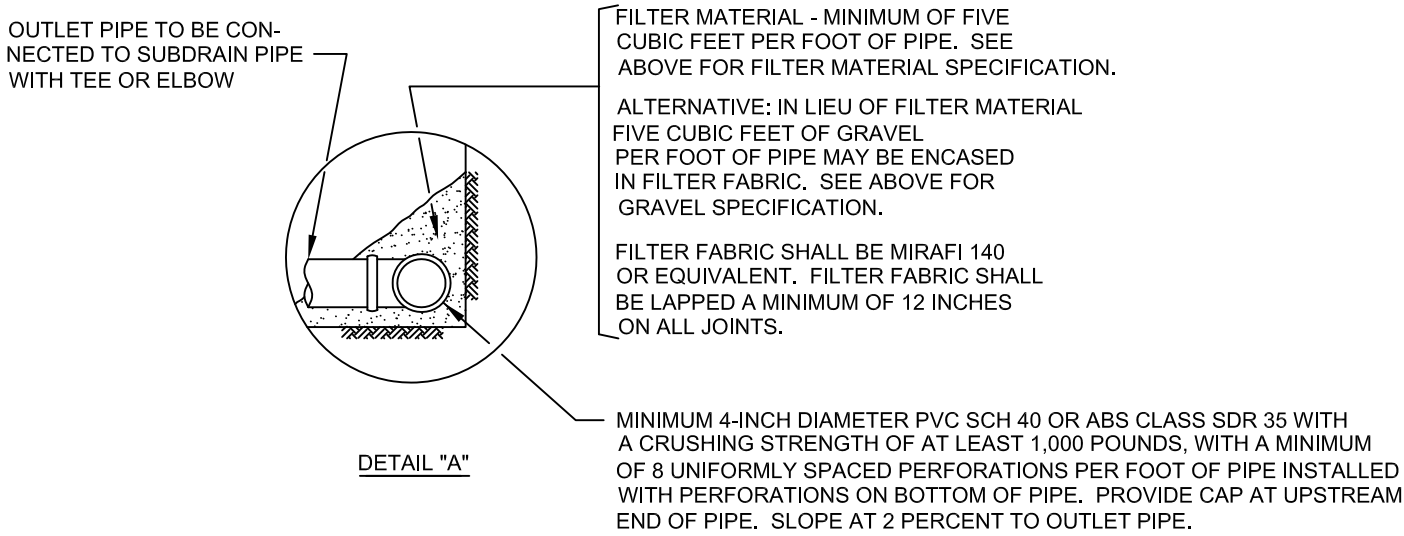
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

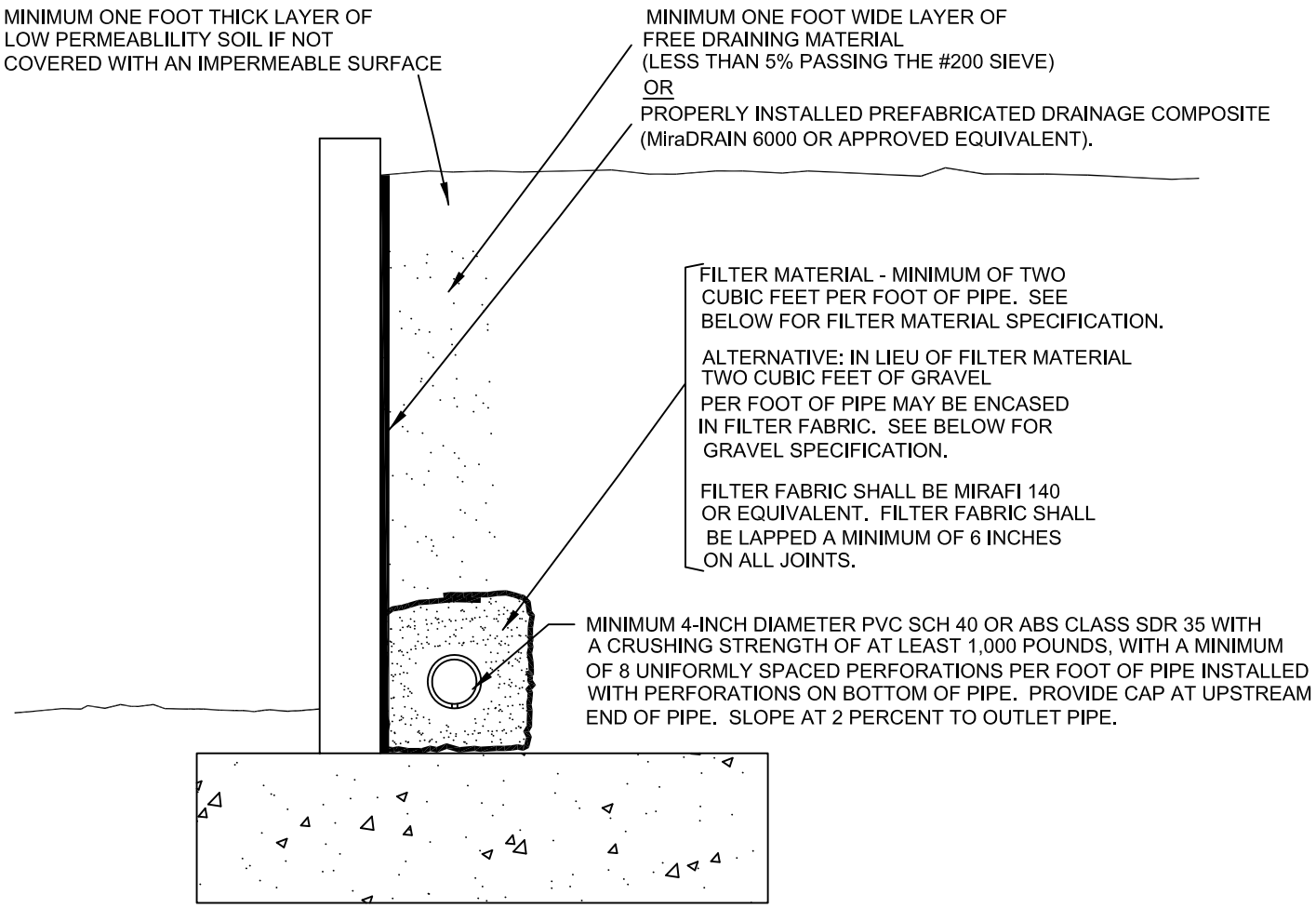
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

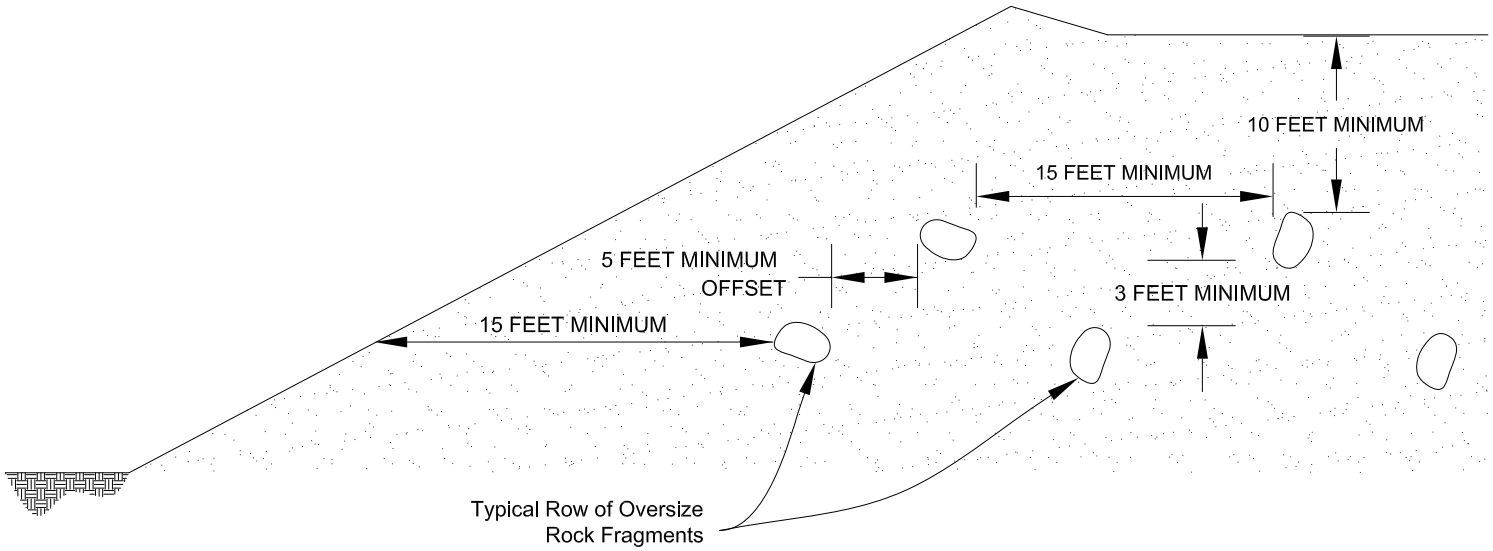
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

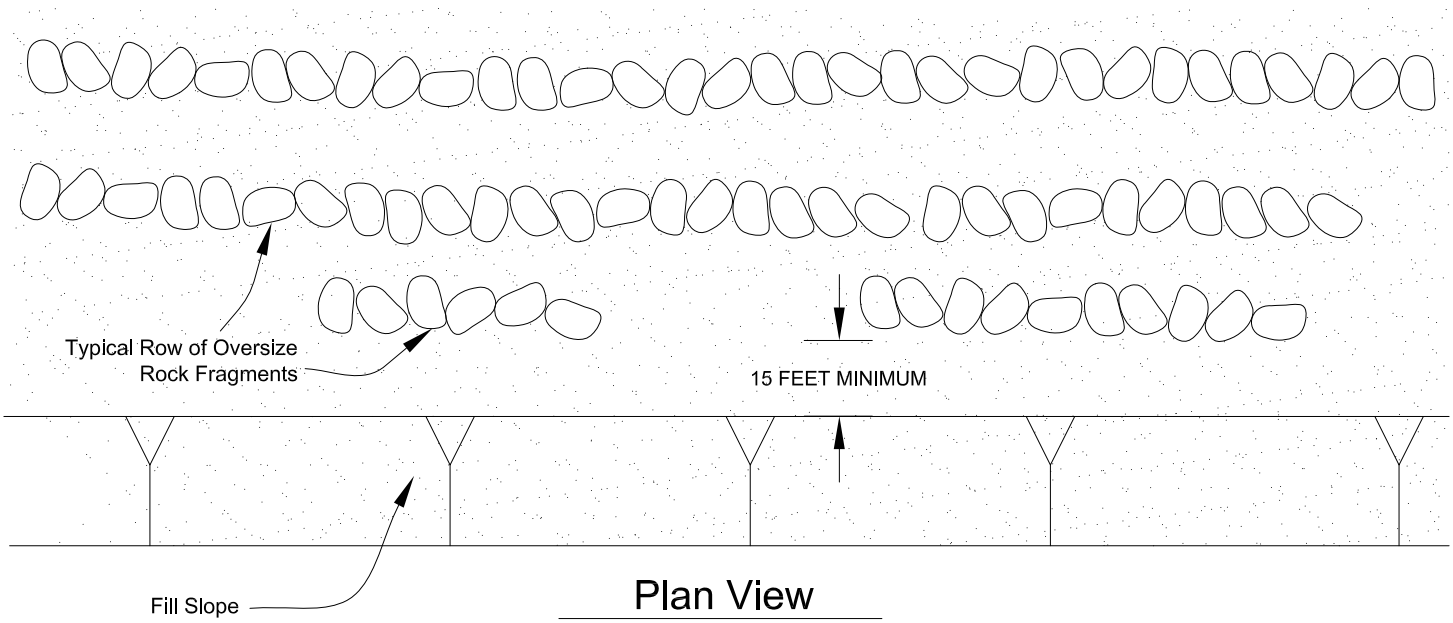
DRAWN: JAS
CHKD: GKM

PLATE D-7

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

PLATE D-8

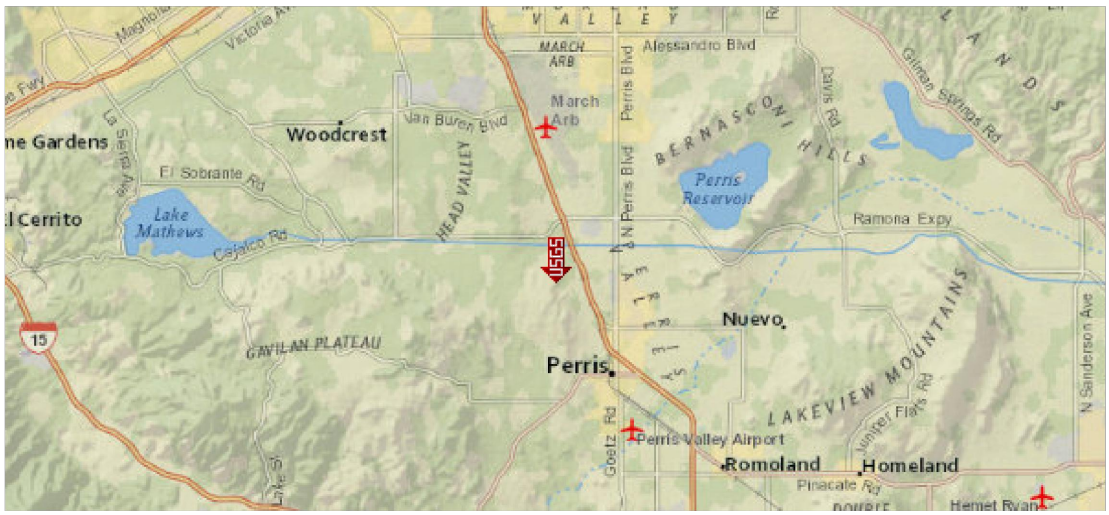
SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

USGS Design Maps Summary Report

User–Specified Input

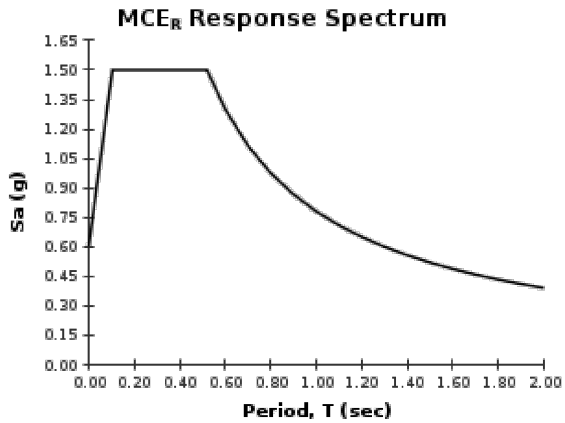
Building Code Reference Document	ASCE 7-10 Standard (which utilizes USGS hazard data available in 2008)
Site Coordinates	33.82862°N, 117.25505°W
Site Soil Classification	Site Class C – "Very Dense Soil and Soft Rock"
Risk Category	I/II/III

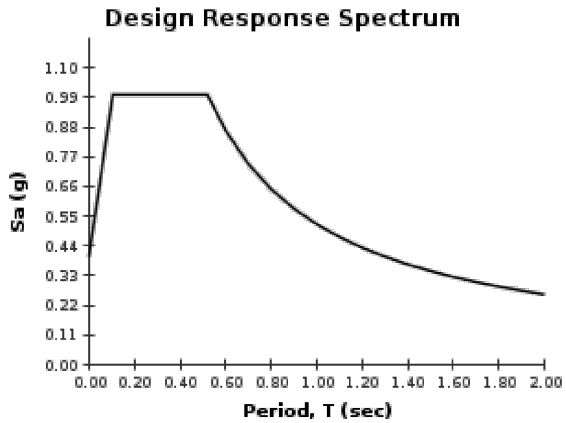


USGS–Provided Output

S_S =	1.500 g	S_{MS} =	1.500 g	S_{DS} =	1.000 g
S_1 =	0.600 g	S_{M1} =	0.780 g	S_{D1} =	0.520 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





SOURCE: U.S. GEOLOGICAL SURVEY (USGS)
<http://geohazards.usgs.gov/designmaps/us/application.php>

SEISMIC DESIGN PARAMETERS
PROPOSED INDUSTRIAL FACILITY
RIVERSIDE COUNTY, CALIFORNIA

DRAWN: JL
CHKD: JAS

SCG PROJECT
16G116-1

PLATE E-1

SOUTHERN CALIFORNIA GEOTECHNICAL

Appendix 4: Historical Site Conditions

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

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Assessor's Parcel Number: 317-210-018
Unincorporated Riverside County, CA 92570

Prepared for:

Western Realco
500 Newport Center Drive
Suite #630
Newport Beach, CA 92660

Prepared by:
Hazard Management Consulting, Inc.
211 W. Avenida Cordoba, Suite 200
San Clemente, CA 92672
(949) 361-3902

April 5, 2021

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Executive Summary

Hazard Management Consulting, Inc. (HMC) is pleased to submit this Environmental Site Assessment (ESA) for the property referenced above in an unincorporated area of Riverside County, California (Site) (Figures 1 & 2). This ESA is intended to evaluate the Site for potential Recognized Environmental Conditions (RECs) that may be present and was conducted as part of your efforts to acquire the Site. The Site consists of a large vacant parcel noted with soil stockpiles. Historic uses at the Site included agricultural use and vacant land.

The Site is noted with an eastern slope and steep drops along the southern border. The Site is mapped with elevations of approximately 1,590 feet above mean sea level (msl) in the southwest descending to 1,540 feet above MSL in the northeastern corner. The Site and Site vicinity are noted with a regional slope to the northeast. The Site is located in a mixed use area of unincorporated Riverside County with residential and commercial/industrial uses as well as vacant land.

The Site is bound:

- to the north by Rider Street across which are residential properties and vacant land;
- on the east by Patterson Avenue across which are residential and commercial properties including a church;
- to the south by residential properties and Walnut Street across which are residential properties and vacant land; and,
- to the west by a residential community.

Key findings of this Phase I ESA are as follows:

- The Site and Site vicinity were noted with agricultural ,residential, and/or vacant land uses since the earliest aerial photographs through 2016. A soil stockpile was noted at the Site in the 2009 photograph. Increasing residential properties were noted over the years in the Site vicinity as well as sparse commercial/ industrial facilities;

- The Site was noted to be vacant and unpaved during the Site reconnaissance portion of this investigation. Notable soil piles that appeared to have been imported to the Site were observed though no staining or other evidence of a release was observed in the stockpile. As the source of the soil piles is unknown, they are considered an "issue of note".

- Based on the review of the available regulatory information, the Site is located in an area with limited industrial operations. There are facilities in the Site vicinity listed to use and store hazardous materials and /or that experienced releases. None were close enough or in the correct orientation to be considered an REC to the Site;

- The likelihood of vapor intrusion condition existing at the Site is considered to be very low; and,

- The Site was vacant at the time of this report. Therefore, no suspect asbestos containing materials were identified at the Site.

Conclusions

We have performed a Phase I Environmental Site Assessment in accordance with ASTM E1527-13 Guidelines for the property located at Assessor's Parcel Number: 317-210-018 in Riverside County, California. **No RECs were identified during this investigation.**

However, the imported soil stockpiles observed at the Site were considered an "issue of note". There were no Historical RECs or Controlled RECs found as part of this assessment.

There was no evidence noted of asbestos containing materials at the Site.

Recommendations

Based on the findings of this ESA, we have the following recommendations for your review:

- We recommend that samples of the stockpiled soil be collected and analyzed to assess whether the stockpiles contain hazardous substances.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
APN:317-210-018 Riverside County, California 92570

1. INTRODUCTION

Hazard Management Consulting, Inc. (HMC) is pleased to submit this Environmental Site Assessment (ESA) for the property referenced above in an unincorporated area of Riverside County, California (Site) (Figures 1 & 2). This ESA is intended to evaluate the Site for potential Recognized Environmental Conditions (RECs) that may be present and was conducted as part of your efforts to acquire the Site. The Site consists of a large vacant parcel noted with soil stockpiles. Historic uses at the Site included agricultural use and vacant land.

The Site is noted with an eastern slope and steep drops along the southern border. The Site is mapped with elevations of approximately 1,590 feet above mean sea level (msl) in the southwest descending to 1,540 feet above MSL in the northeastern corner. The Site and Site vicinity are noted with a regional slope to the northeast. The Site is located in a mixed use area of unincorporated Riverside County with residential and commercial/industrial uses as well as vacant land.

1.1. Objective

In accordance with the ASTM E 1527-13 Standard Practice for Environmental Site Assessments, the objective of the ESA is to assess, to the extent feasible under the standard, the likelihood that Recognized Environmental Conditions (RECs), as defined by ASTM, are present at the Site.

A Recognized Environmental Condition "means 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. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies" (ASTM Standard Practice E1527-13). Performance of a Phase I ESA is intended to reduce, but not eliminate,

uncertainty regarding the potential for Recognized Environmental Conditions in connection with a property, within reasonable limits of time and cost.

All Appropriate Inquires (AAI) as defined in the Final Rule (40 CFR, Part 312), must be conducted by persons seeking the landowner liability protections under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) prior to acquiring a property or seeking or receiving federal brownfields grants under the authorities of CERCLA. The purpose of AAI, as defined in the AAI Final Rule, is to identify releases and threatened releases of hazardous substances, which cause or threaten to cause the incurrence of response costs. The U.S. Environmental Protection Agency (EPA) has stated that ASTM Standard E-1527-13 is consistent with the Standards and Practices for AAI and is compliant with the statutory criteria for AAI.

1.2. Scope Of Services, Methodology And Limitations

The findings of this ESA must be viewed in recognition of certain limiting conditions. The scope of work commissioned for this project does not represent an exhaustive study, but rather a reasonable inquiry, consistent with good commercial practice, in general accordance with ASTM Practice E-1527-13.

The scope of work for this ESA included the following activities:

- A Site walk to document the current condition of the Site and neighboring facilities.
- Review of a regulatory database report.
- Submittal of questionnaires to the current Owner and User of the report.
- Review of historical references including aerial photographs, city directories, Sanborn Maps and topographic maps.
- On-line research and file review requests concerning the Site and suspect off site sources at the State of California Regional Water Quality Control Board (RWQCB) and Department of Toxic Substances Control (DTSC) websites.

- Review of Riverside County Department of Environmental Health and Building and Safety files.

- Review of records maintained by the South Coast Air Quality Management District.

- Preparation of this report of findings.

In the course of this assessment, HMC has relied on information provided by outside parties, such as regulatory agencies, previous reports and interview sources. For the purpose of this assessment, such third-party information is assumed to be accurate unless contradictory evidence is noted, and HMC does not express or imply any warranty regarding information provided by third-party source.

2. SITE DESCRIPTION

2.1. Site Setting

The Site is undeveloped land noted with an eastern slope and steep drops along the southern border. The Site is mapped with elevations of approximately 1,590 feet above mean sea level (msl) in the southwest descending to 1,540 feet above MSL in the northeastern corner. The Site and Site vicinity are noted with a regional slope to the northeast. The Site is located in a mixed use area of unincorporated Riverside County with residential and commercial/industrial uses as well as vacant land.

The Site is bound:

- to the north by Rider Street across which are residential properties and vacant land;
- on the east by Patterson Avenue across which are residential and commercial properties including a church;
- to the south by residential properties and Walnut Street across which are residential properties and vacant land; and,
- to the west by a residential community.

Riverside Public Utilities would provide water, sewer, and electric service to the Site. SoCal Gas would provide natural gas services.

2.2. Regional Geology and Hydrogeology

Information regarding regional geological and hydrogeological conditions was obtained from information included on the California Department of Water Resources website. The Site lies within the San Jacinto groundwater basin which underlies San Jacinto, Perris, Moreno, and Menifee Valleys in western Riverside County. This basin is bound by the Box Springs Mountains on the north. The San Jacinto fault and the San Timoteo Badlands bound the northeastern portion of the basin. The basin is bound on the east by impermeable rocks of the San Jacinto Mountains. Various hills and mountains bound the south side of the basin. The basin is bound on the west by unnamed hills composed of metamorphic rocks and granitic rocks that are mapped as part of an erosional surface. The valleys are drained by the San Jacinto River and its tributaries. Lake Perris is located in the eastern part of Perris Valley and overlies the northwestern portion of the basin. Average annual precipitation ranges from 10 to 18 inches.

Groundwater was reported to be found between 50 to 75 feet bgs in the region in a Phase I report prepared for a nearby facility located approximately 4,250 feet east northeast of the Site. Groundwater in the region was also reported to generally flow to the south southeast.

3. INTERVIEWS AND USER PROVIDED INFORMATION

The User of this report is Western Realco and would be considered the "User" of the report per ASTM definitions. We requested all available information from the User.

3.1. Title Records

A Title Report was not provided to HMC for review.

3.2. User Knowledge

HMC interviewed Mr. Jeremy Mape of WRC who indicated that his firm has no unique knowledge of the Site and is unaware of any environmental issues at the Site. He indicated that they are paying full market value for the Site.

3.3. Owner/Occupant Knowledge

An HMC Owner Questionnaire was not provided to HMC for review nor was an Owner representative available for interview.

3.4. Environmental Liens or Activity and Use Limitations

After the review of documentation provided by third-party sources, no liens or AULs were found for the Site.

4. SITE USE AND HISTORY

Past usage of the subject Site was assessed through a review of historical aerial photographs, topographic maps, and an EDR search of city directories and prior reports. Review of the Sanborn Map collection indicates that Sanborn Maps were not produced for the Site.

4.1. Aerial Photograph Review

Aerial photographs covering the Site were obtained from Environmental Data Resources, Inc. (EDR). Photographs were available from the period 1938 through 2016. Copies of the aerial photographs are included in Appendix B. A summary of the observations noted from the aerial photographs are as follows:

1938-53 The Site was noted with a small area of agriculture use and the remainder was seen to be vacant land. The Site vicinity was noted with agricultural uses and vacant land.

1961 The Site was observed to be entirely in use for agricultural operations. Increased agricultural uses were also noted in the Site vicinity.

1967 The Site was first seen as entirely vacant land. Several residential properties were noted immediately north and south of the Site.

1974-85 No significant changes to the Site or the Site vicinity were noted.

1989 Several vehicles were seen to be parked in the northwestern corner of the Site. What appeared to be a grading project for a residential community was noted immediately west of the Site. Increased residential uses were seen in the Site vicinity.

1990 No significant observations were made at the Site. The previously noted land west of the Site was noted with the construction of a residential

community.

1994 No significant changes to the Site or the Site vicinity were noted.

1997 The Site was largely unseen in this aerial photograph with the exception of the eastern 500 feet of the Site. No significant changes to the Site or the Site vicinity were noted.

2002 No significant changes were noted at the Site. The residential community immediately west of the Site appeared to have completed construction.

2006 No significant changes to the Site or the Site vicinity were noted.

2009 A soil stockpile was observed in the southwestern quadrant of the Site. No significant changes to the Site vicinity were observed.

2012-16 No significant changes to the Site or the Site vicinity were noted with the exception of some industrial/commercial activity at residential properties east of the Site.

4.2. Topographic Maps

Historical topographic maps were also reviewed as part of this effort and aided in interpreting the overall site history though no specific observations regarding the Site were made.

4.3. Sanborn Maps

Sanborn maps are maps that were created for the insurance industry to document site activities in metropolitan areas of the country and were used in underwriting. They often times contain detailed information about a site. While they were prepared for insurance underwriting and were not environmental maps per se, they often times contain information that is useful in evaluating the historical use of a Site. Sanborn Coverage for the Site was not reported in the EDR records search.

4.4. EDR City Directory Review

EDR performed a search of the City Directory records for the Site address and nearby properties at approximately five-year intervals. Review of the City Directory records suggests that the Site and immediate vicinity have been used for industrial, warehousing and related purposes since original construction of the area. The Site was not reported with a physical address and therefore no results for the Site were found. The City Directory research reported majorly individual ownership of residential properties in the area along with community centers, dental offices, and a thrift store.

4.5. Summary

The Site and Site vicinity were noted with agricultural ,residential, and/or vacant land uses since the earliest aerial photographs through 2016. A soil stockpile was noted at the Site in the 2009 photograph. Increasing residential properties were noted over the years in the Site vicinity as well as sparse commercial/ industrial facilities. The soil stockpile at the Site is considered an "issue of note" but does not pose an REC.

5. PRIOR INVESTIGATIONS

No previously prepared reports for the Site were provided to HMC for review.

6. SITE RECONNAISSANCE

Mr. Troy Taylor of HMC conducted a Site and Site vicinity reconnaissance on March 19, 2021. The reconnaissance was conducted in order to identify visible evidence of RECs at the Site and to assess possible conditions off Site that may impact the Site. Mr. Taylor was unaccompanied during the Site walk.

The Site was seen to be an uneven, vacant unpaved parcel of land. Several areas, most notably the southwestern quadrant of the Site, were seen with soil stockpiles that appeared to have been imported to the Site. Some were observed with construction debris such as wood and concrete mixed into the soil. Along the southern border of the Site, landscaping waste and construction debris was observed. Scattered trash and a concentrated area of i dumping of general refuse was also noted. No staining was observed at the Site nor were any chemical containers noted within the refuse. No RECs were noted however the imported soil piles would be considered an "issue of note".

Selected photographs illustrating the property and nearby off-Site conditions are included in Appendix A. Summaries of the Site and observations are detailed below.

Description and Use of Site:	The Site contains a vacant, unpaved parcel of land.
Underground and Aboveground Storage Tanks:	No evidence of USTs or ASTS were observed at the Site.
Hazardous Materials, Hazardous Wastes or Petroleum Products:	No chemical uses or hazardous waste was seen.
Drains, Drain lines and Sumps:	No drainage features were observed.
Pits, Ponds, Lagoons	No ponds, pits, or lagoons were observed at the Site.
Industrial Wastewater:	The Site is vacant. No industrial wastewater is generated at the Site.
Stains:	No stains were seen at the Site.
Wells:	No wells were noted at the Site.
Transformers:	Transformers were not observed at the Site.
Other Features:	Soil stockpiles of what appeared to be imported soil were noted along with areas of refuse disposal and are considered an "issue of note".

6.1. Site Vicinity

The Site is bound:

- to the north by Rider Street across which are residential properties and vacant land;
- on the east by Patterson Avenue across which are residential and commercial properties including a church;

- to the south by residential properties and Walnut Street across which are residential properties and vacant land; and,
- to the west by a residential community.

7. REGULATORY AGENCY DATABASE RESEARCH

Regulatory agency database information was obtained from a standard radius Site Assessment (ASTM) report by Environmental Data Resources, Inc. The center of the search was in the approximate center of the Site. Search distances for specific databases were one-quarter to one mile as specified in the ASTM 1527-13 standard. The database search includes over 70 federal, state, local, and proprietary records. A complete copy of this report is included in Appendix B.

7.1. Database Records Concerning the Target Property

The Site was not listed on any database searched as part of the EDR Radius Report.

7.2. Database Records Concerning the Site Vicinity

We reviewed the database report for off-Site potential sources within the relevant search distance. In review of the many entries on the database, we reviewed the following factors that affect the ability of a facility to affect the Site:

- Distance from the Site,
- Location from the Site with regard to the direction of groundwater flow,
- Nature of the release and whether the release has affected soil, groundwater or both,
- Status of the investigation (e.g. open or closed)

Groundwater was generally noted to flow to the south southeast in the Site vicinity, therefore facilities located to the north northwest were considered. Only those facilities judged using these factors are discussed below. The following presents a summary of our findings:

Location	Address	Dist.	Dir.	Lists	REC	RATIONALE
McAnally Enterprises	23480 Rider St.	13'	NNE	LUST REG 8 SWEEPS UST CA FID UST CORTESE HIST CORTESE RIVERSIDE CO. LUST CERS	YES	This facility is located northeast from the Site, directly across the intersection of Rider Street and Patterson Avenue. The facility was noted with a release of diesel fuel from a leaking UST discovered during the closure of the UST. The release was reported to only have affected soil and is considered unlikely to pose a threat to the Site given the limited release.
AOC LLC	19991 Seaton Avenue	1,447'	WNW	CORRACTS RCRA LQG ENVIROSTOR HIST UST RAATS	NO	This facility is listed as a corrective action case on Envirostor. Investigations been conducted at this facility under DTSC oversight for specific constituents such as phenol, dioxane, and benzene. Previous investigations have determined that no further investigation was necessary however newer "Areas of Concern" have been identified for investigation in 2007. Very minimal information on this case was available and did not include data from any of the investigations conducted. At this time, there is no evidence to suggest this off Site facility poses an REC to the Site.

Orphan Sites

Orphan Sites are those properties that are included on various agency lists, but for which the records do not have sufficient address information for the database program to map the site. None of the sites listed were in close enough proximity and/or of such a nature to be a concern.

7.3. Summary of Off Site Issues

Based on the review of the available regulatory information, the Site is located in an area of some industrial operations. Some facilities in the Site vicinity were listed to use and store hazardous materials. As noted above, some of these facilities were noted with releases that have been remediated or potential for releases investigated in the Site

vicinity. However, at this time, there was no information reviewed that provided evidence that off Site releases pose a threat to the Site. There were no RECs identified from off Site sources.

8. LOCAL AGENCY AND OTHER RECORDS REVIEW

8.1. Tribal Records

The Site is not located in a tribal area so there were no tribal records to review.

8.2. Oil and Gas Wells

The State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources online mapping website was reviewed for the location of active, plugged, or abandoned oil wells in the vicinity of the Site. No oil wells were listed as having been drilled on Site.

8.3. State of California

The State of California Geotracker and EnviroStor websites were also reviewed for information on potential on or off Site facilities that are being remediated under either RWQCB or DTSC oversight. No active sites were listed on these databases that were not listed in the EDR review.

Public records requests were submitted to the RWQCB and DTSC as well. The RWQCB and DTSC both reported that no records were found for the Site during their respective records searches.

8.4. Riverside County Department of Environmental Health

We submitted a request to review files and conducted a file review at the RIVCODEH, the local “Certified Unified Program Agency” for Riverside. As such, they inspect facilities that use and generate hazardous waste and oversee UST regulations within the County. No files were found during their records search.

8.5. Riverside County Department of Building and Safety

At the time of this report, HMC's public records request is still being processed by the RCDBS. Given that the Site has never been developed, no records for the Site are expected.

8.6. South Coast Air Quality Management District

A review of the SCAQMD Facility Information Detail online database indicated that no records existed for the Site.

9. VAPOR INTRUSION, ASBESTOS, AND OTHER MATERIALS

9.1. Vapor Intrusion

The likelihood of vapor intrusion condition existing at the Site is considered to be very low.

9.2. Asbestos

The Site is vacant. No threat from asbestos was identified.

9.3. Radon

The Site is listed as being located in Zone 2 with regards to radon indicating that radon maybe present at concentrations less than 4 pico curies / liter.

9.4. Mold

The Site is vacant. No mold or water damage was identified.

10. SUMMARY OF FINDINGS

Key findings of this Phase I ESA are as follows:

- The Site and Site vicinity were noted with agricultural ,residential, and/or vacant land uses since the earliest aerial photographs through 2016. A soil stockpile was noted at the Site in the 2009 photograph. Increasing residential properties were noted over the years in the Site vicinity as well as sparse commercial/ industrial facilities;

- The Site was noted to be vacant and unpaved during the Site reconnaissance portion of this investigation. Notable soil piles that appeared to have been imported to the Site were observed though no staining or other evidence of a release was observed in the stockpile. As the source of the soil piles is unknown, they are considered an "issue of note".

- Based on the review of the available regulatory information, the Site is located in an area with limited industrial operations. There are facilities in the Site vicinity listed to use and store hazardous materials and /or that experienced releases. None were close enough or in the correct orientation to be considered an REC to the Site;

- The likelihood of vapor intrusion condition existing at the Site is considered to be very low; and,

- The Site was vacant at the time of this report. Therefore, no suspect asbestos containing materials were identified at the Site.

11. DATA GAPS

At the time of this report, the RCDBS was processing our public records request.

12. CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in accordance with ASTM E1527-13 Guidelines for the property located at Assessor's Parcel Number: 317-210-018 in Riverside County, California. **No RECs were identified during this investigation.**

However, the imported soil stockpiles observed at the Site were considered an "issue of note". There were no Historical RECs or Controlled RECs found as part of this assessment.

There was no evidence noted of asbestos containing materials at the Site.

13. RECOMMENDATIONS

Based on the findings of this ESA, we have the following recommendations for your review:

- We recommend that samples of the stockpiled soil be collected and analyzed to assess whether the stockpiles contain hazardous substances.

14. QUALIFICATIONS

Mark S. Cousineau, NREP

Mr. Mark S. Cousineau, principal with HMC, has a diverse professional background in environmental management, which includes working as a generator, regulator, consultant, and corporate advisor in hazardous waste and other environmental issues.

Mr. Cousineau's technical background is focused in the area of overseeing large-scale environmental investigations and regulatory compliance management related to site assessments, subsurface investigations, facility surveys, and site remediation. To projects such as these, Mr. Cousineau brings expertise in evaluating complex sites and developing solutions to solve the technical, operational, regulatory, financial and timing issues. In addition, Mr. Cousineau routinely assists clients in developing environmental business plans for single assets and multi-site real estate portfolios and has designed and implemented several tenant audit programs involving the proactive management of environmental risk caused by on-site commercial and industrial tenant activities.

Mr. Cousineau has provided litigation support and has served, as a court-appointed expert on environmental issues, is a Member of the National Registry of Environmental Professionals, holds a M.S. in Environmental Sciences from California State University Fullerton and a B.S. in Chemistry from University California San Diego.

As signatory to this report, I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of this part. I have the specific qualifications based on education, training, and experience to assess the 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."

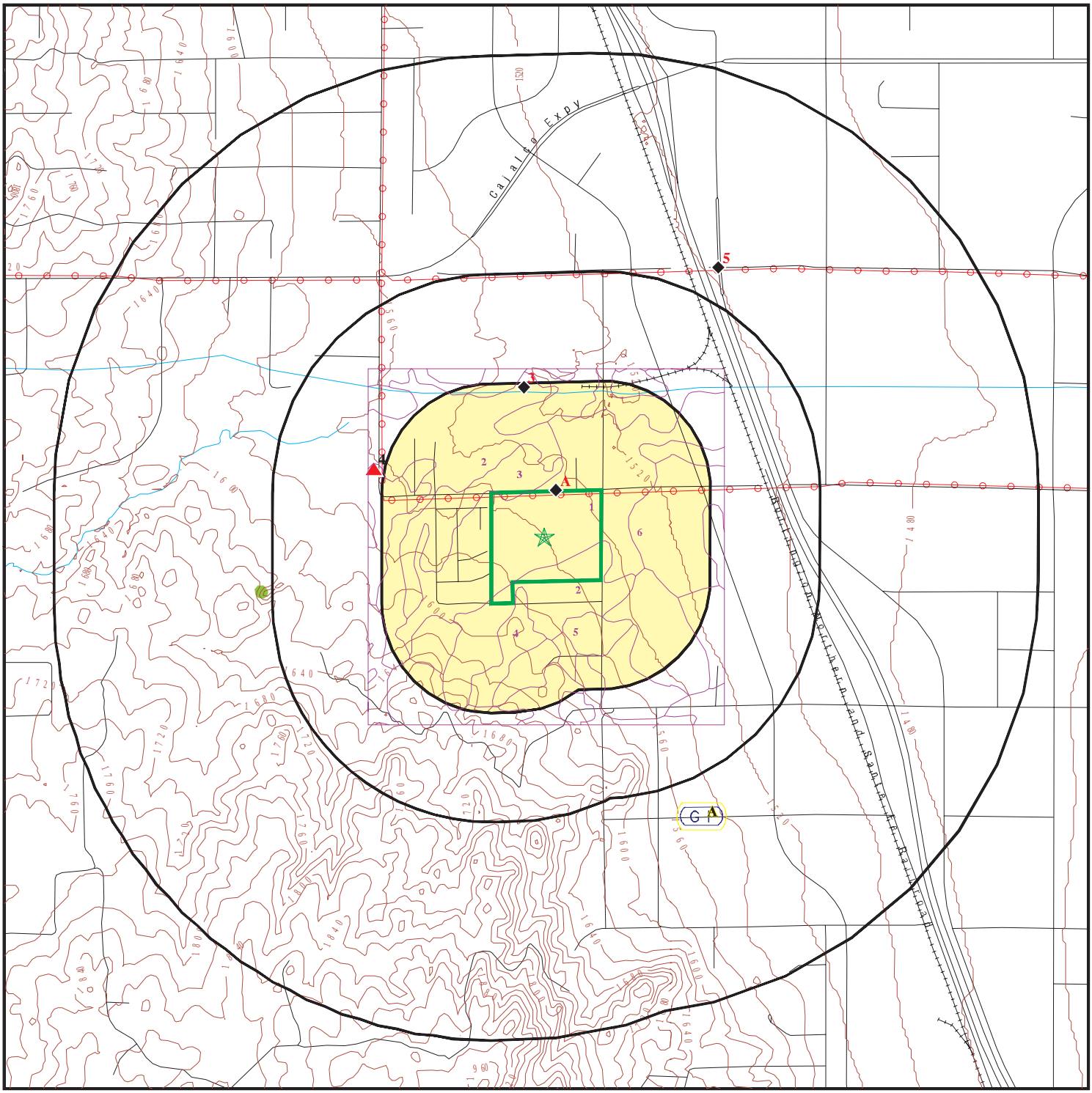
Mark Cousineau, NREP
Principal

15. REFERENCES

Advanced Environmental Concepts, Inc., Phase I ESA for Val Verde Unified School District Preissman Ranch Property, June 2000

TABLES

OVERVIEW MAP - 6407949.2S



0 1/4 1/2 1 Miles

- 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

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: Rider and Patterson	CLIENT: Hazard Management Consulting
ADDRESS: Rider and Patterson Perris CA 92570	CONTACT: Troy Taylor
LAT/LONG: 33.828675 / 117.255041	INQUIRY #: 6407949.2s DATE: March 17, 2021 3:10 pm

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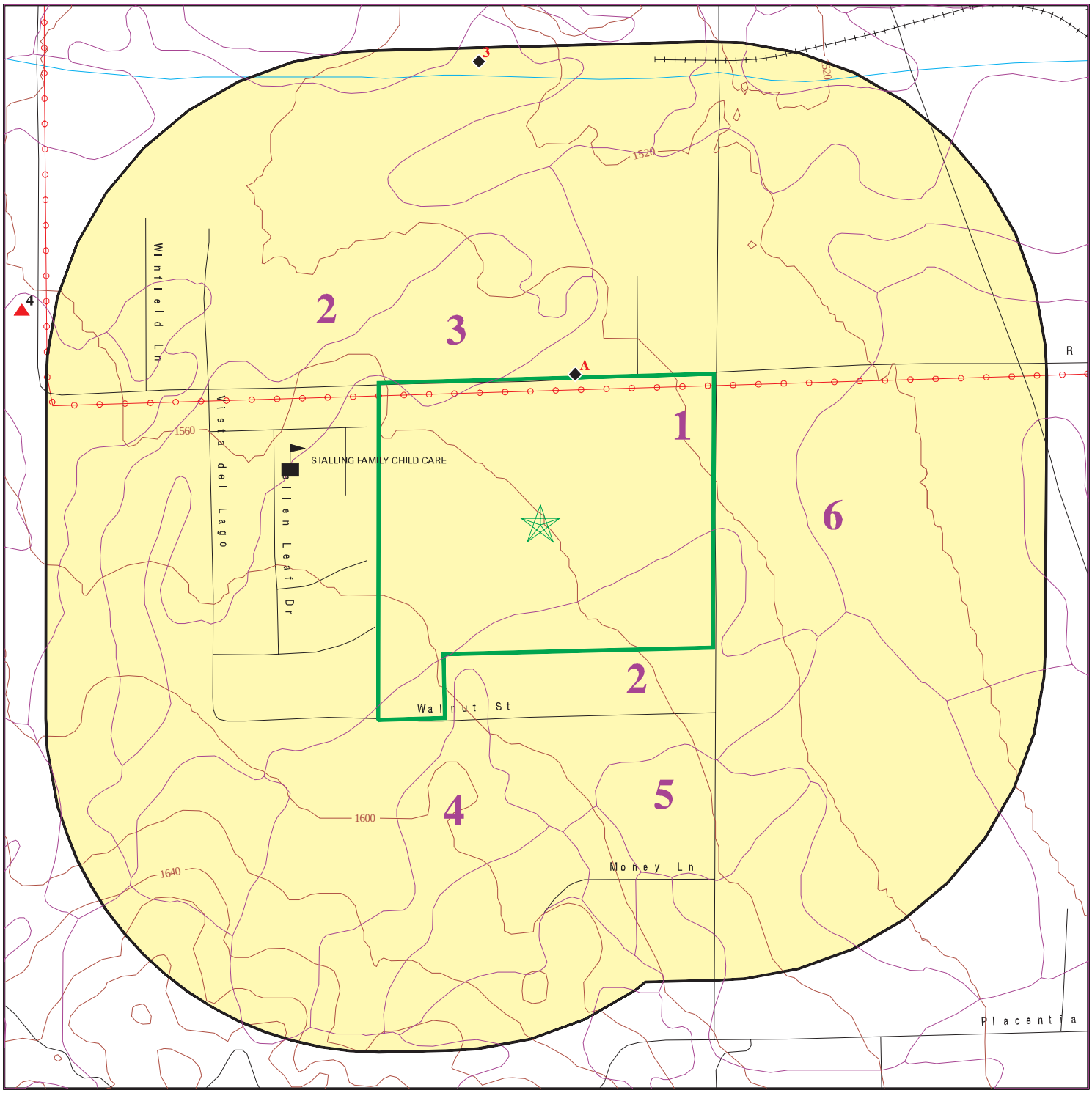
DETAIL MAP - 6407949.2S



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

0 1/16 1/8 1/4 Miles

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: Rider and Patterson	CLIENT: Hazard Management Consulting
ADDRESS: Rider and Patterson Perris CA 92570	CONTACT: Troy Taylor INQUIRY #: 6407949.2s
LAT/LONG: 33.828675 / 117.255041	DATE: March 17, 2021 3:12 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	1	0	NR	1
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	1	NR	NR	1
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	0	NR	NR	NR	0
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 CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	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	1	1	NR	2
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		2	0	0	NR	NR	2

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								
INDIAN VCP	0.500		0	0	0	NR	NR	0
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	0	NR	NR	0
HAULERS	0.001		0	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	0.001		0	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	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		1	0	NR	NR	NR	1
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		1	0	NR	NR	NR	1
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	1	NR	NR	NR	1
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	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	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		1	0	0	NR	NR	1
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	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		1	0	0	NR	NR	1
HWP	1.000		0	0	1	0	NR	1
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	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	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	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
HWTS	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	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	6	1	4	1	0	12

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

NOTES:

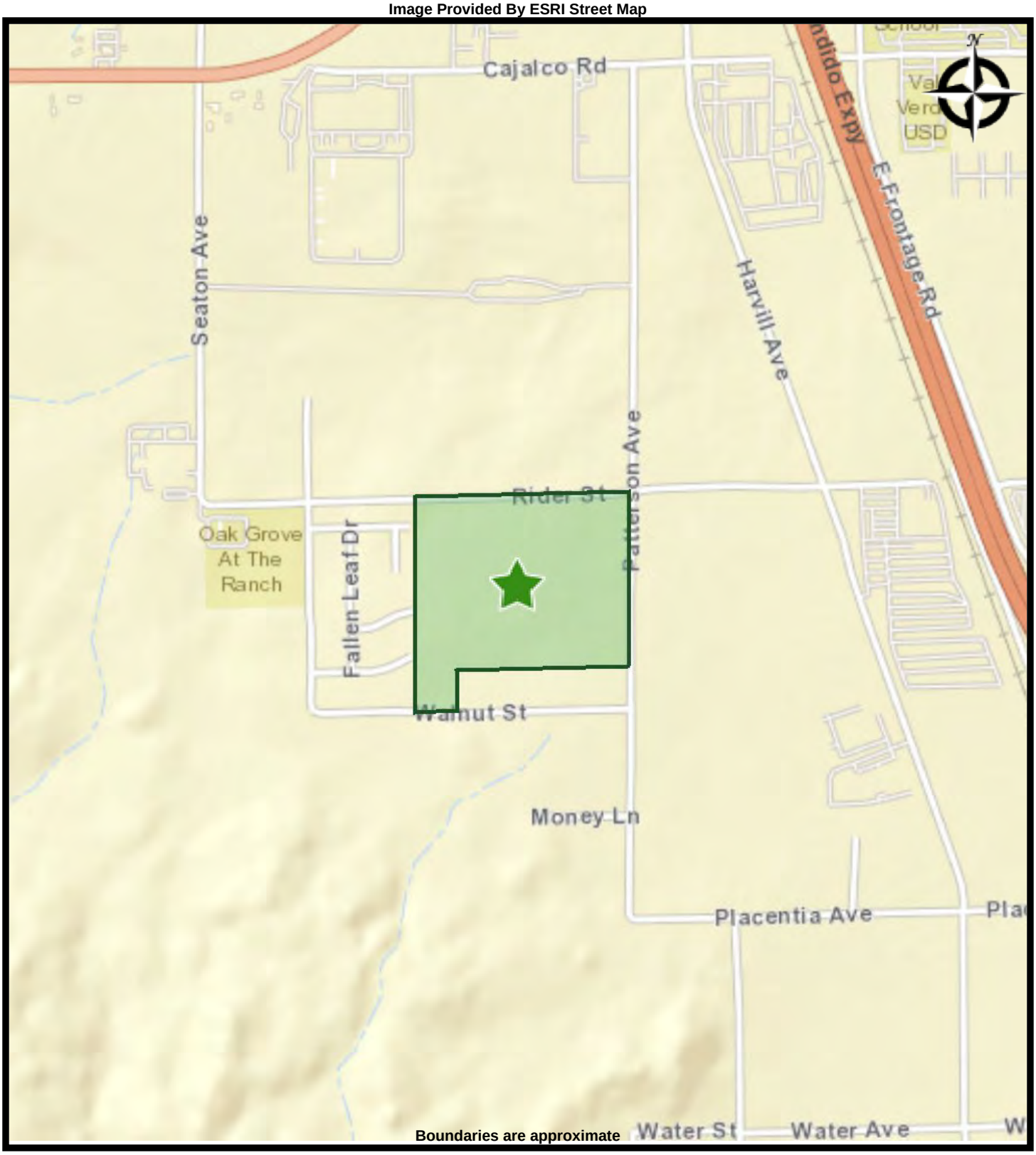
TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

FIGURES

Image Provided By ESRI Street Map



Boundaries are approximate

HMC
HAZARD MANAGEMENT CONSULTING

Figure 1

APN: 317-210-018
Riverside County, California 92570

Image Provided By EDR Aerials

HMC
HAZARD MANAGEMENT CONSULTING

Figure 2

APN: 317-210-018
Riverside County, California 92570

APPENDIX A

View S Along Western Border

View E Across Site

Refuse at the Site

Refuse Pile at Site

Soil Pile with Construction Debris

Landscaping and Construction Debris

APPENDIX B

Rider and Patterson

Rider and Patterson

Perris, CA 92570

Inquiry Number: 6407949.3

March 17, 2021

Certified Sanborn® Map Report

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

Certified Sanborn® Map Report

03/17/21

Site Name:	Client Name:
Rider and Patterson	Hazard Management Consulting
Rider and Patterson	211 W. Avenida Cordoba
Perris, CA 92570	San Clemente, CA 92672
EDR Inquiry # 6407949.3	Contact: Troy Taylor

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Hazard Management Consulting were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

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Certified Sanborn Results:

Certification # 0D36-4175-B3B5

PO # NA

Project WRC-SW Corner Rider/Patterson

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 0D36-4175-B3B5

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- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Rider and Patterson

Rider and Patterson

Perris, CA 92570

Inquiry Number: 6407949.4

March 17, 2021

EDR Historical Topo Map Report

with QuadMatch™

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

EDR Historical Topo Map Report

03/17/21

Site Name:	Client Name:
Rider and Patterson	Hazard Management Consulting
Rider and Patterson	211 W. Avenida Cordoba
Perris, CA 92570	San Clemente, CA 92672
EDR Inquiry # 6407949.4	Contact: Troy Taylor

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Hazard Management Consulting were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	NA	**Latitude:**	33.828675 33° 49' 43" North
Project:	WRC-SW Corner Rider/Patters	**Longitude:**	-117.255041 -117° 15' 18" West
		UTM Zone:	Zone 11 North
		UTM X Meters:	476400.31
		UTM Y Meters:	3743189.31
		Elevation:	1560.31' above sea level

Maps Provided:

2012	1942
1979	1901
1978	
1973	
1967	
1953	
1947	
1943	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

Perris
2012
7.5-minute, 24000

Steele Peak
2012
7.5-minute, 24000

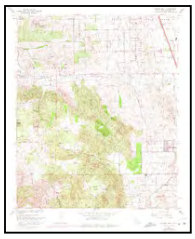
1979 Source Sheets

Perris
1979
7.5-minute, 24000
Aerial Photo Revised 1978

1978 Source Sheets

Steele Peak
1978
7.5-minute, 24000
Aerial Photo Revised 1978

1973 Source Sheets



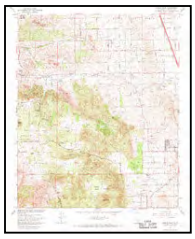
Steele Peak
1973
7.5-minute, 24000
Aerial Photo Revised 1973

Perris
1973
7.5-minute, 24000
Aerial Photo Revised 1973

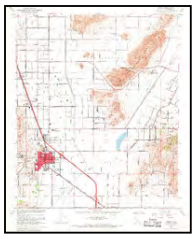
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1967 Source Sheets



Steele Peak
1967
7.5-minute, 24000
Aerial Photo Revised 1966



Perris
1967
7.5-minute, 24000
Aerial Photo Revised 1966

1953 Source Sheets

Perris
1953
7.5-minute, 24000
Aerial Photo Revised 1951

Steele Peak
1953
7.5-minute, 24000
Aerial Photo Revised 1951

1947 Source Sheets

RIVERSIDE
1947
15-minute, 50000

1943 Source Sheets

PERRIS
1943
15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1942 Source Sheets

Perris
1942
15-minute, 62500
Aerial Photo Revised 1939

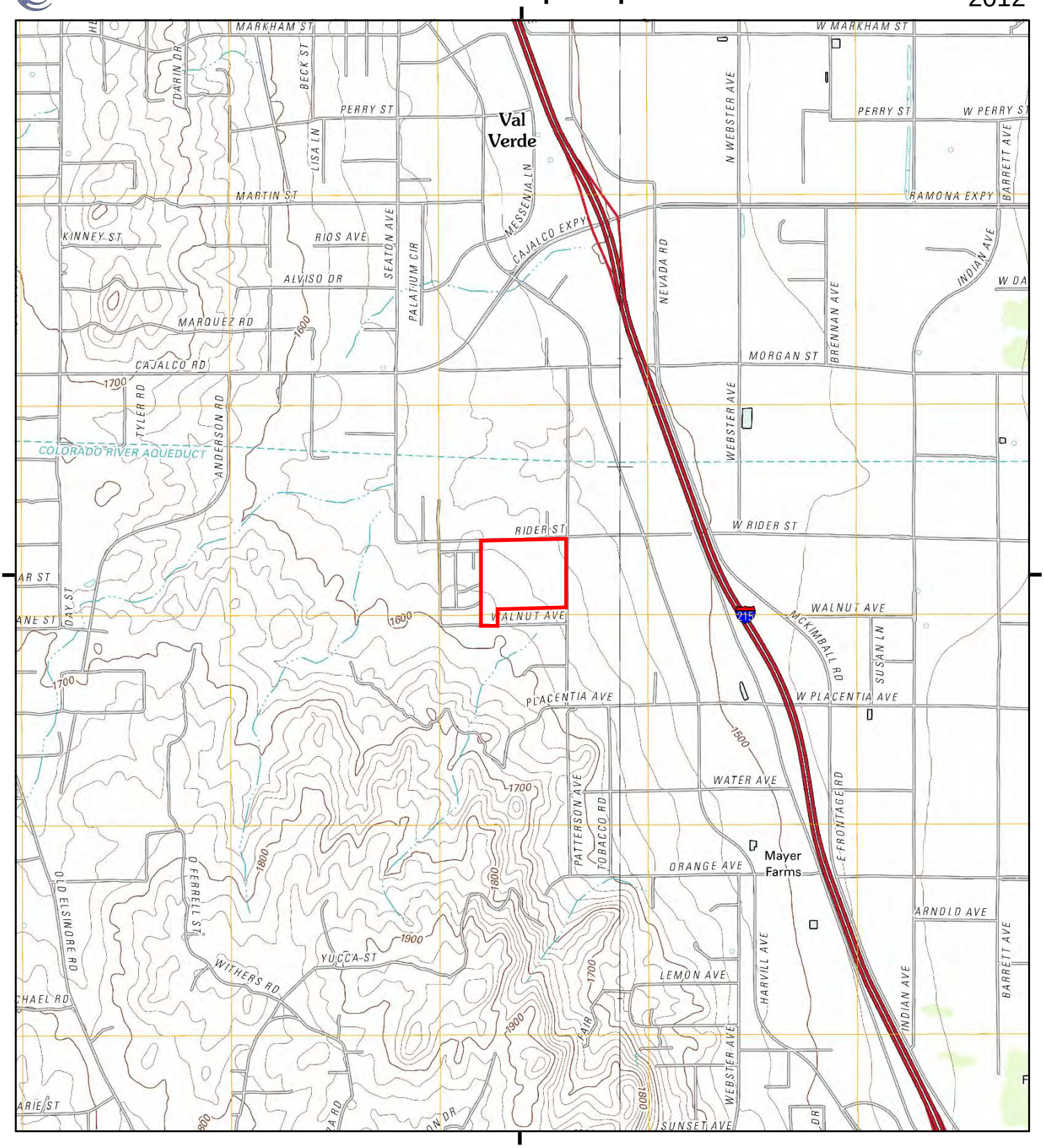
Riverside
1942
15-minute, 62500
Aerial Photo Revised 1939

1901 Source Sheets

Riverside
1901
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

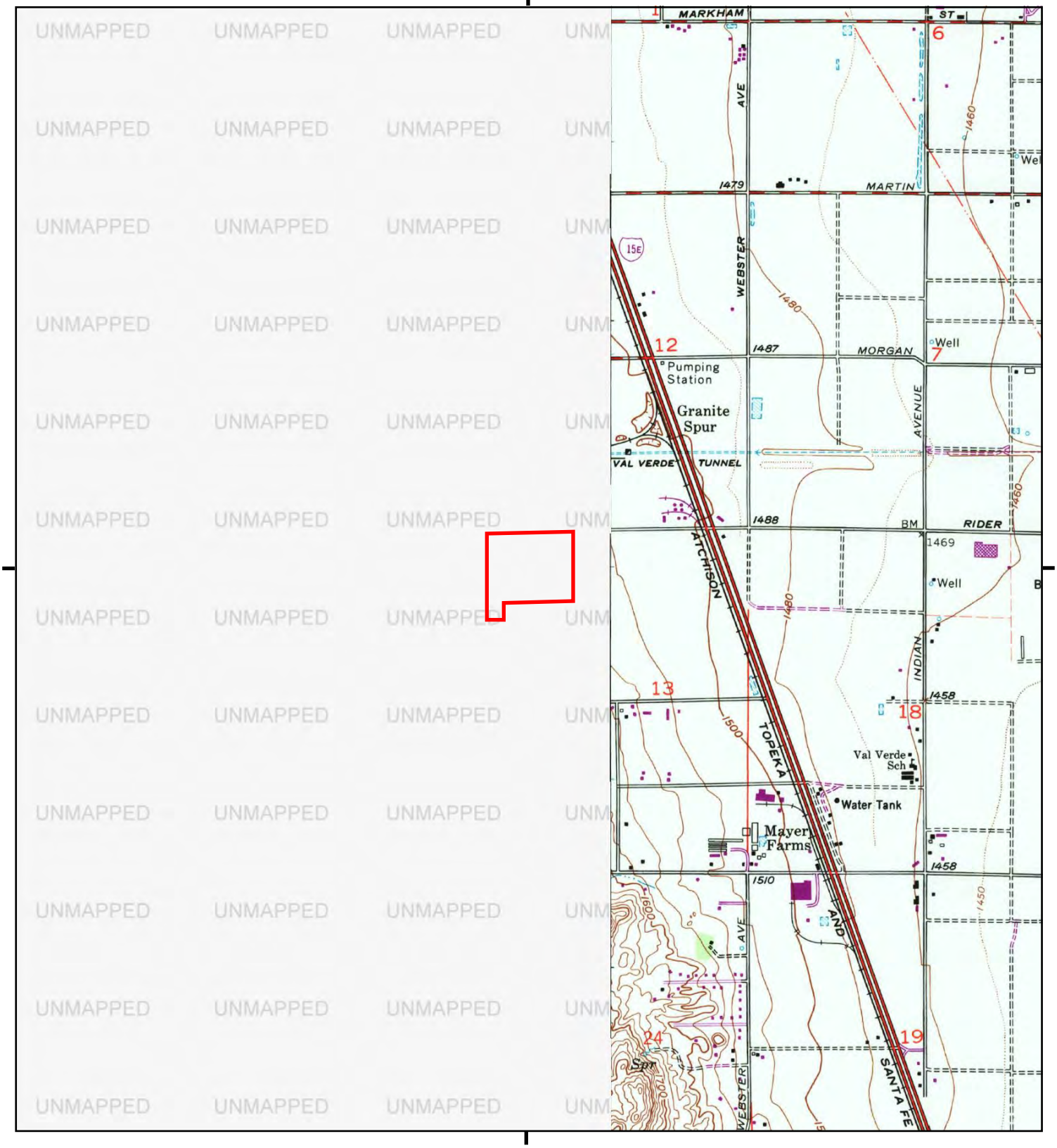
TP, Steele Peak, 2012, 7.5-minute
E, Perris, 2012, 7.5-minute

SITE NAME: Rider and Patterson
ADDRESS: Rider and Patterson
Perris, CA 92570
CLIENT: Hazard Management Consulting

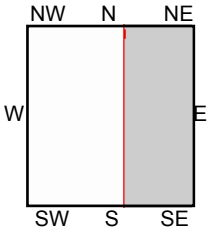
N

Historical Topo Map

1979



This report includes information from the following map sheet(s).



E, Perris, 1979, 7.5-minute

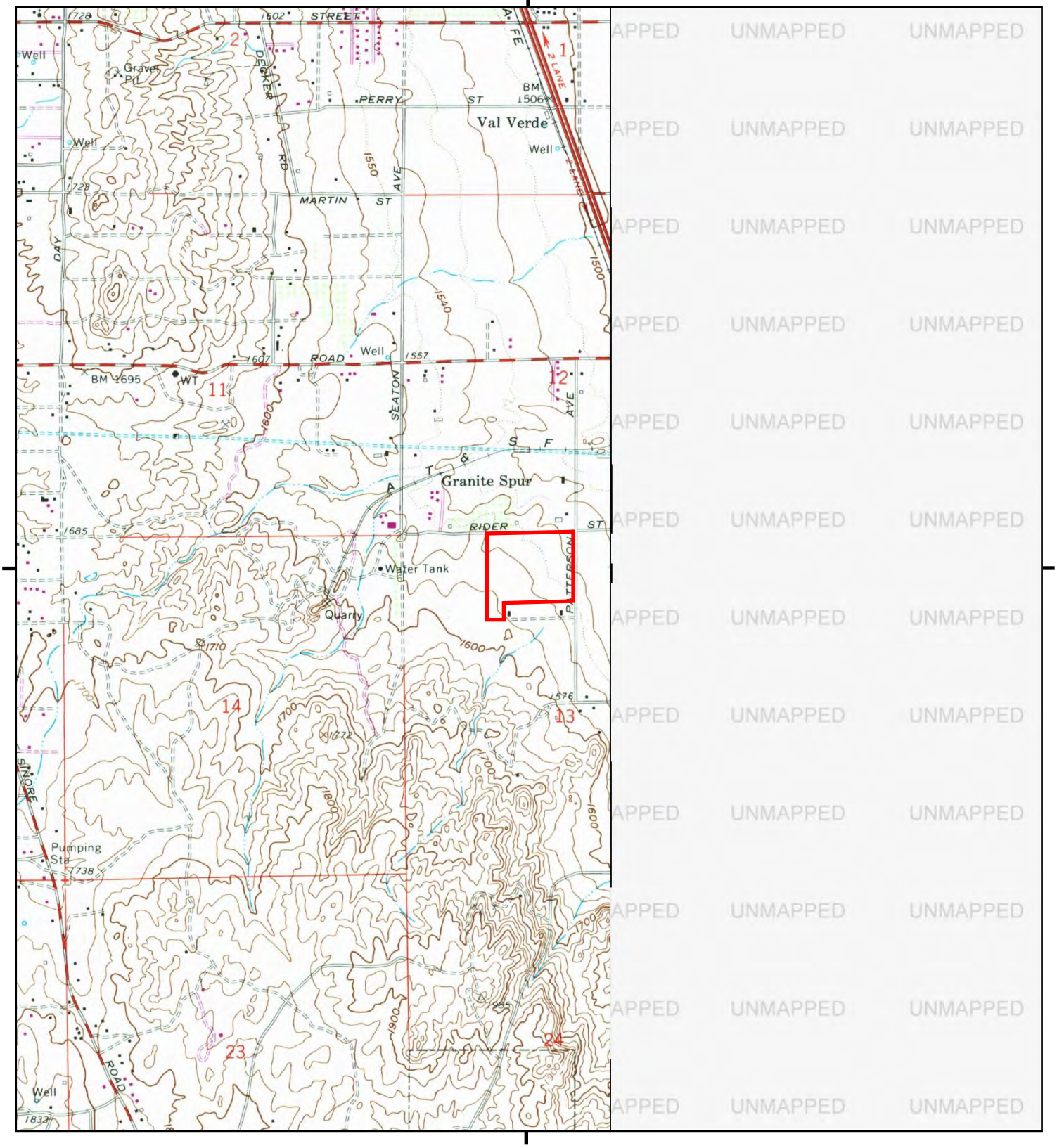
0 Miles 0.25 0.5 1 1.5

SITE NAME: Rider and Patterson
ADDRESS: Rider and Patterson
Perris, CA 92570
CLIENT: Hazard Management Consulting

N

Historical Topo Map

1978



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

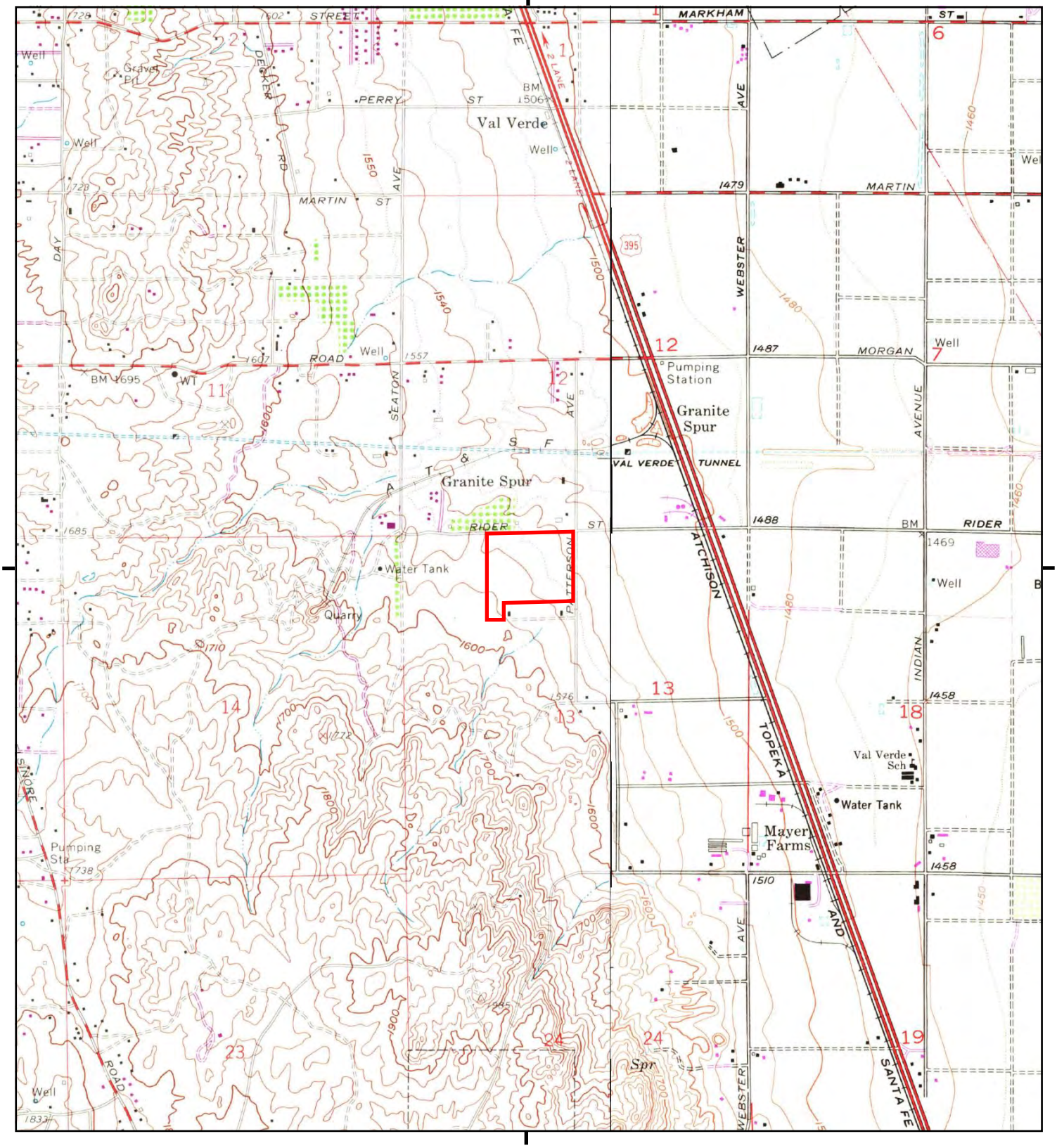
TP, Steele Peak, 1978, 7.5-minute

SITE NAME: Rider and Patterson
ADDRESS: Rider and Patterson
Perris, CA 92570
CLIENT: Hazard Management Consulting

N

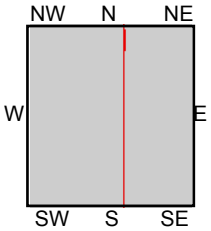
Historical Topo Map

1973



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



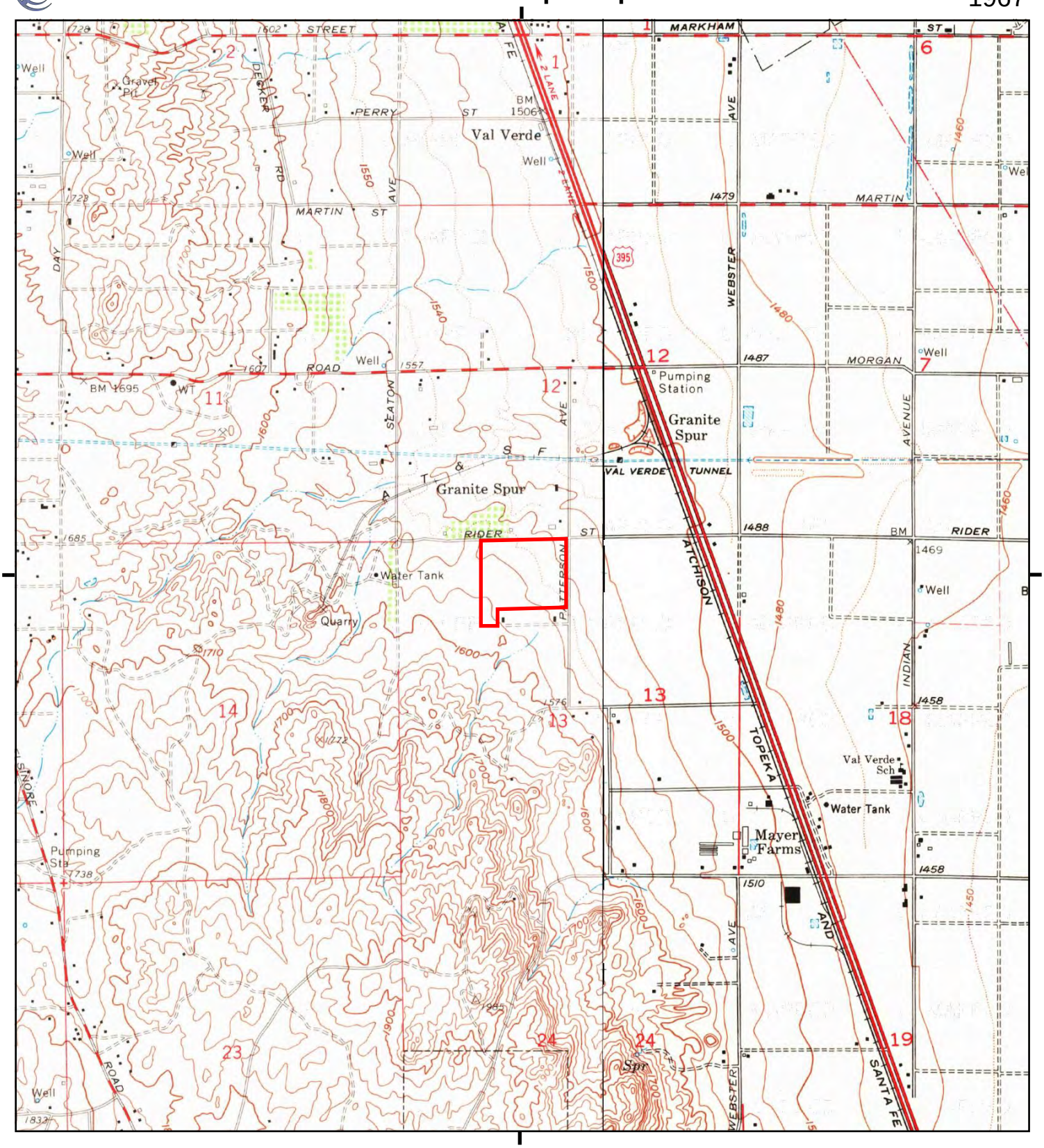
TP, Steele Peak, 1973, 7.5-minute
E, Perris, 1973, 7.5-minute

SITE NAME: Rider and Patterson
ADDRESS: Rider and Patterson
Perris, CA 92570
CLIENT: Hazard Management Consulting

N

Historical Topo Map

1967



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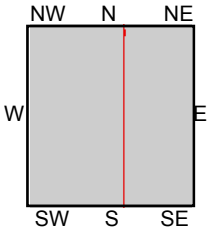


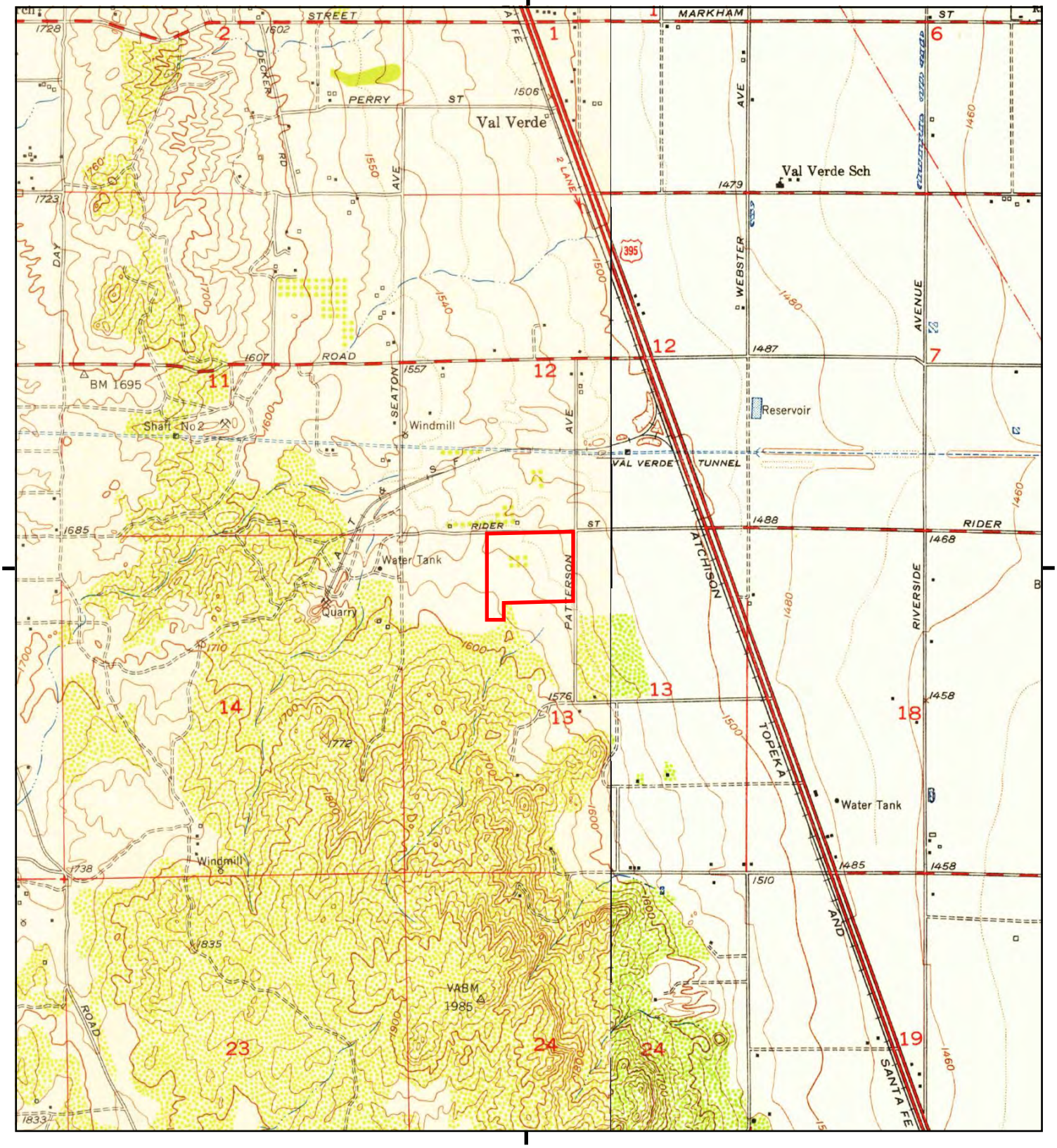
TP, Steele Peak, 1967, 7.5-minute
E, Perris, 1967, 7.5-minute

SITE NAME: Rider and Patterson
ADDRESS: Rider and Patterson
Perris, CA 92570
CLIENT: Hazard Management Consulting

N

Historical Topo Map

1953



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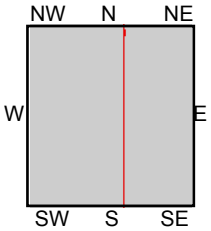


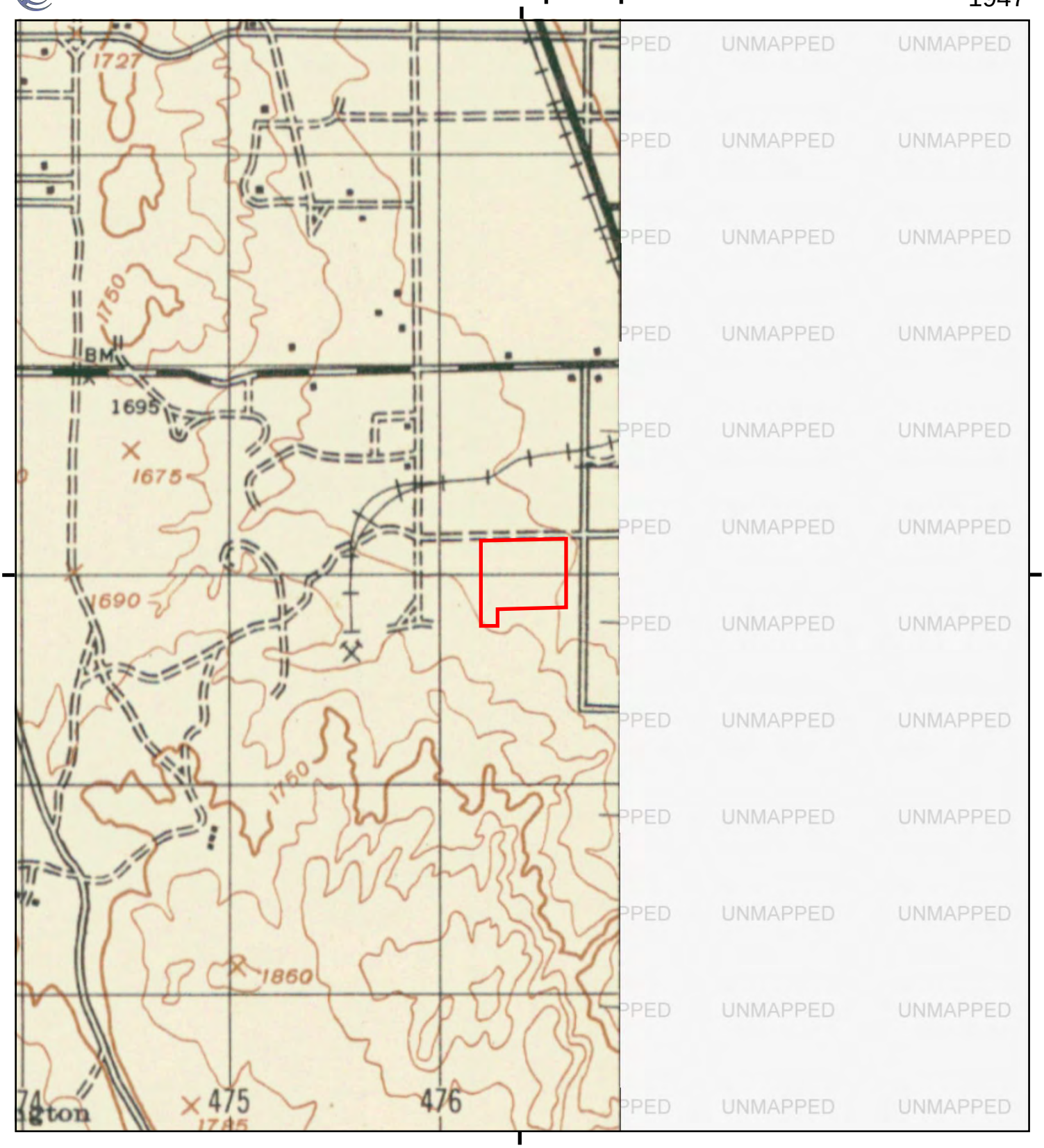
TP, Steele Peak, 1953, 7.5-minute
E, Perris, 1953, 7.5-minute

SITE NAME: Rider and Patterson
ADDRESS: Rider and Patterson
Perris, CA 92570
CLIENT: Hazard Management Consulting

N

Historical Topo Map

1947



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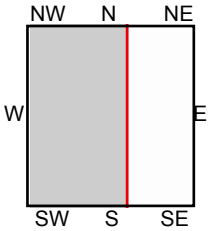


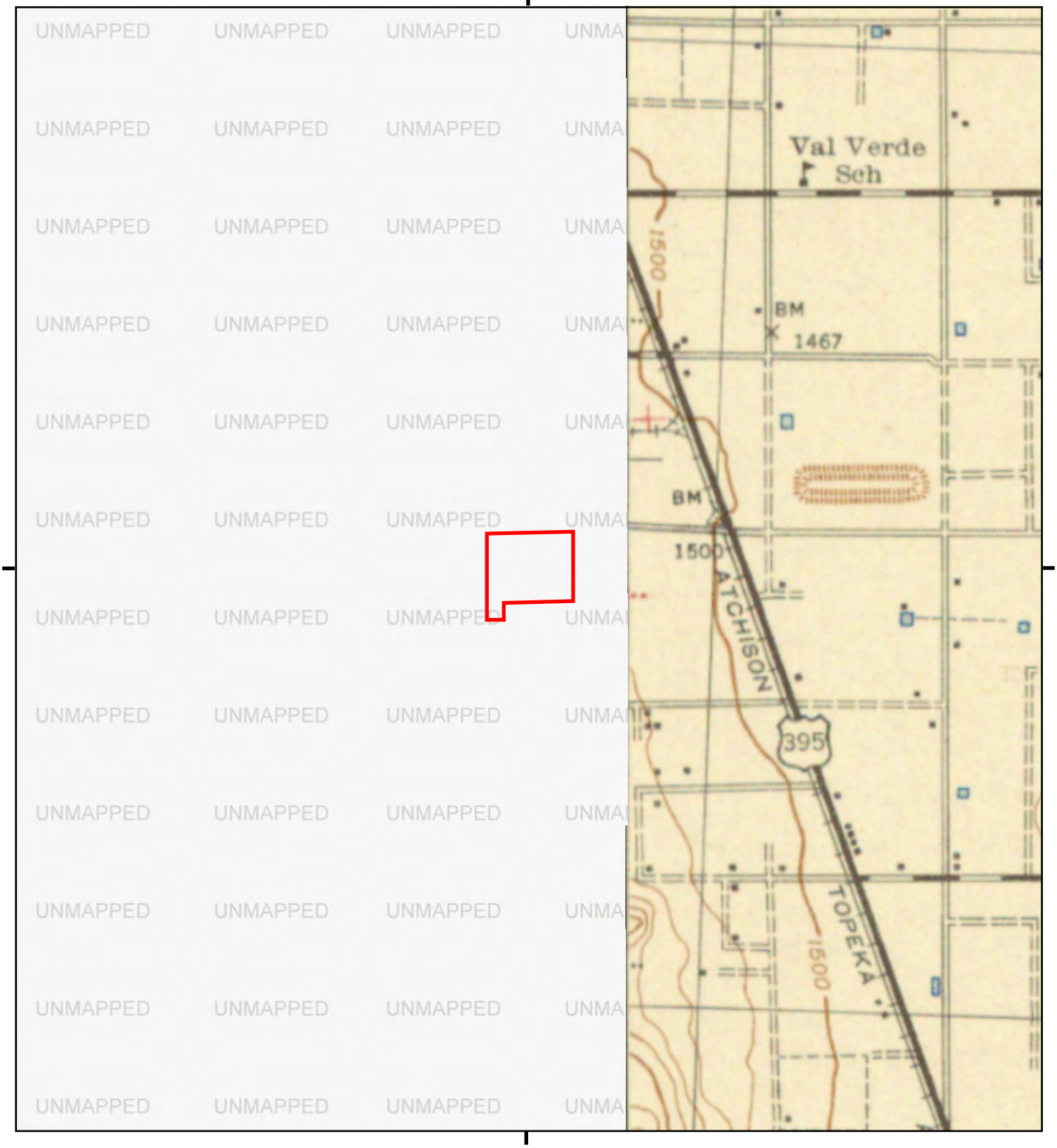
TP, RIVERSIDE, 1947, 15-minute

SITE NAME: Rider and Patterson
ADDRESS: Rider and Patterson
Perris, CA 92570
CLIENT: Hazard Management Consulting

N

Historical Topo Map

1943



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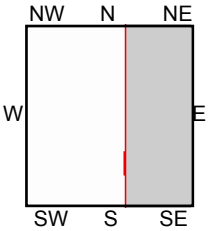


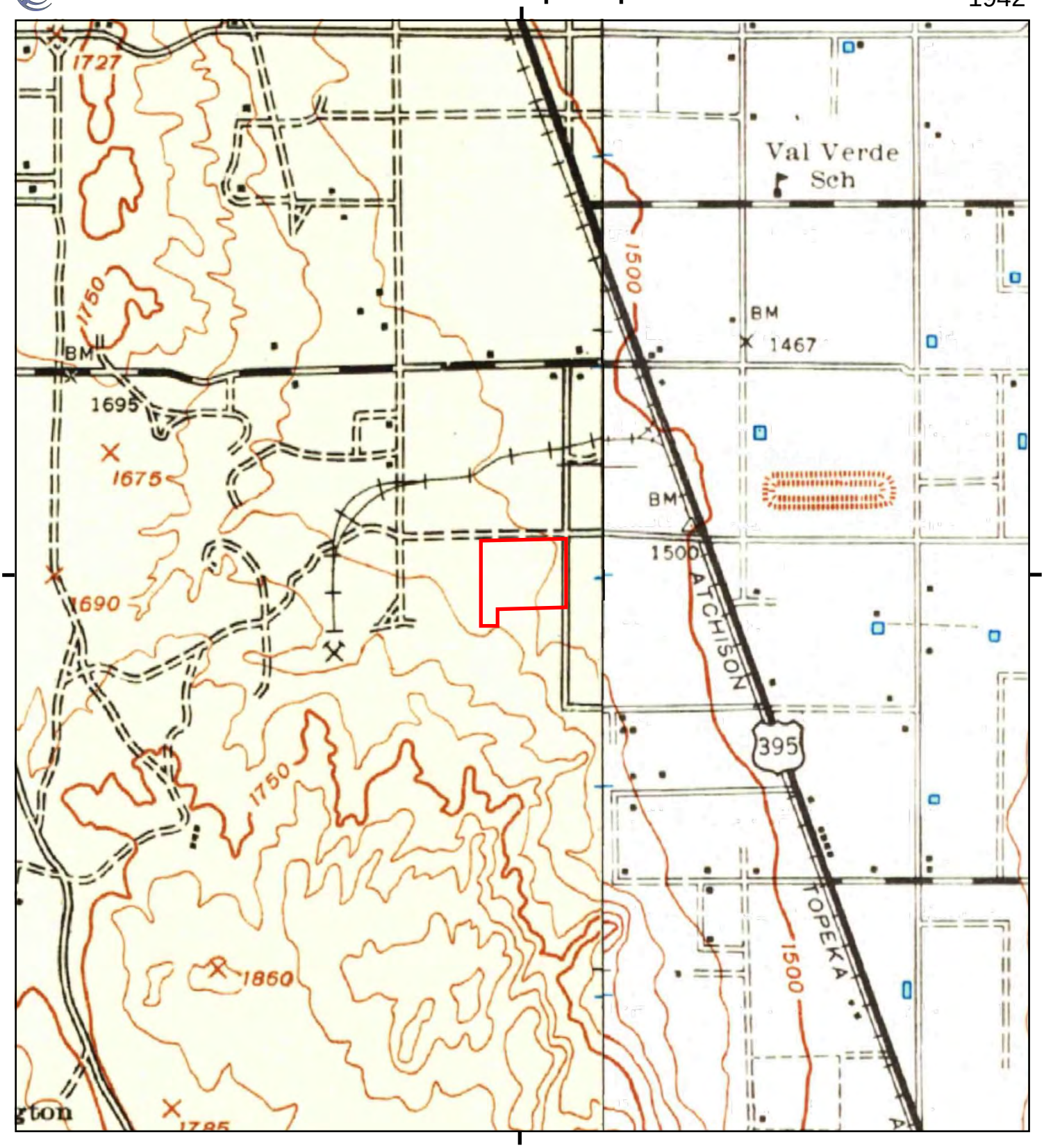
NE, PERRIS, 1943, 15-minute

SITE NAME: Rider and Patterson
ADDRESS: Rider and Patterson
Perris, CA 92570
CLIENT: Hazard Management Consulting

N

Historical Topo Map

1942



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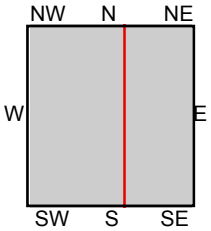


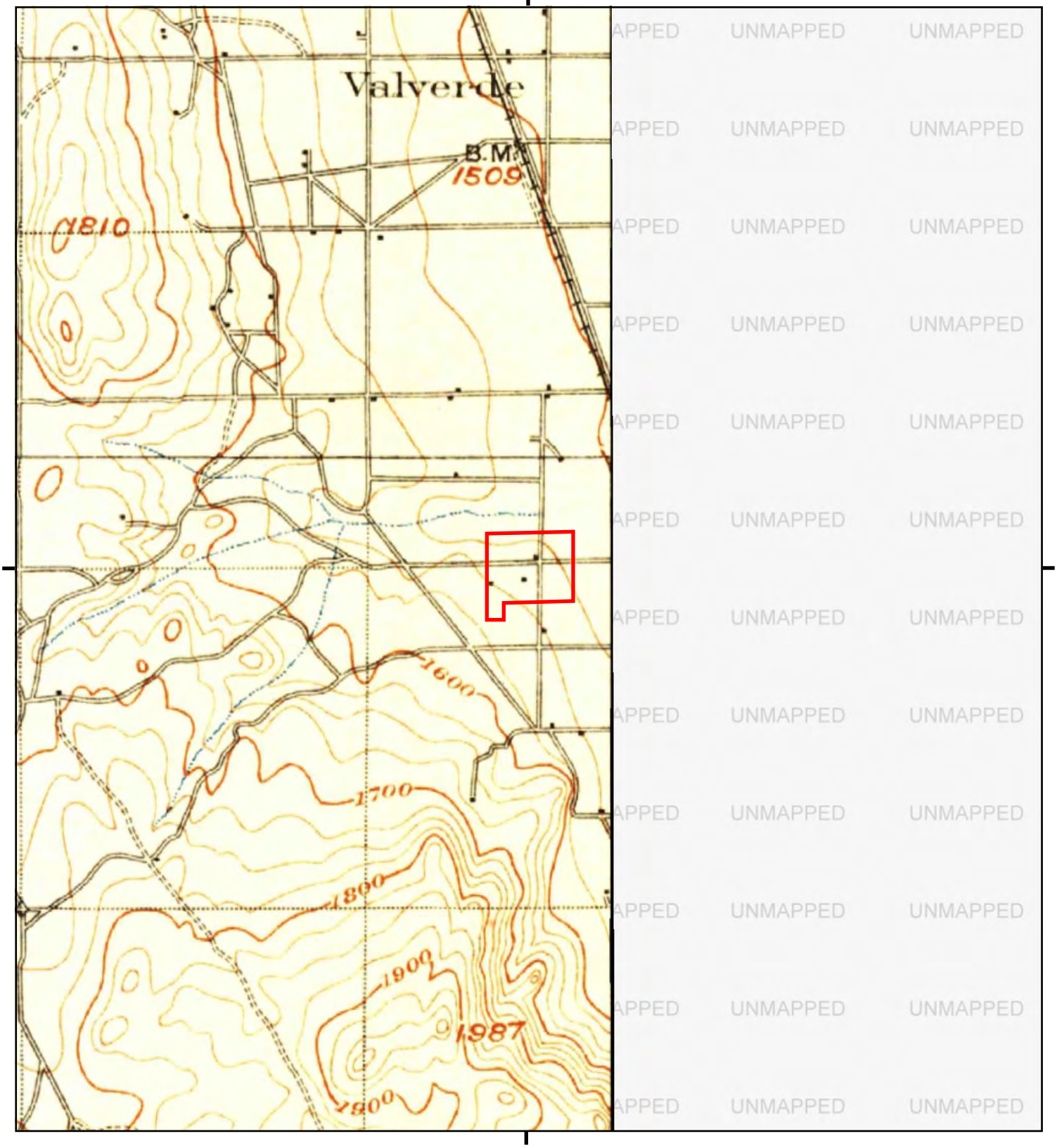
TP, Riverside, 1942, 15-minute
NE, Perris, 1942, 15-minute

SITE NAME: Rider and Patterson
ADDRESS: Rider and Patterson
Perris, CA 92570
CLIENT: Hazard Management Consulting

N

Historical Topo Map

1901



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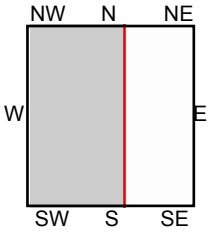

TP, Riverside, 1901, 15-minute

SITE NAME: Rider and Patterson
ADDRESS: Rider and Patterson
Perris, CA 92570
CLIENT: Hazard Management Consulting

N

Rider and Patterson

Rider and Patterson

Perris, CA 92570

Inquiry Number: 6407949.8

March 17, 2021

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

03/17/21

Site Name:

Rider and Patterson
Rider and Patterson
Perris, CA 92570
EDR Inquiry # 6407949.8

Client Name:

Hazard Management Consulting
211 W. Avenida Cordoba
San Clemente, CA 92672
Contact: Troy Taylor

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
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2002	1"=500'	Acquisition Date: January 01, 2002	USGS/DOQQ
1997	1"=500'	Acquisition Date: January 01, 1997	USGS/DOQQ
1994	1"=500'	Acquisition Date: January 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: August 28, 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 #: 6407949.8
YEAR: 2016
= 500'
N
EDR

INQUIRY #: 6407949.8
YEAR: 2012
= 500'
N
EDR

INQUIRY #: 6407949.8
YEAR: 2009
= 500'
N
EDR

INQUIRY #: 6407949.8
YEAR: 2006
= 500'
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EDR

INQUIRY #: 6407949.8
YEAR: 2002
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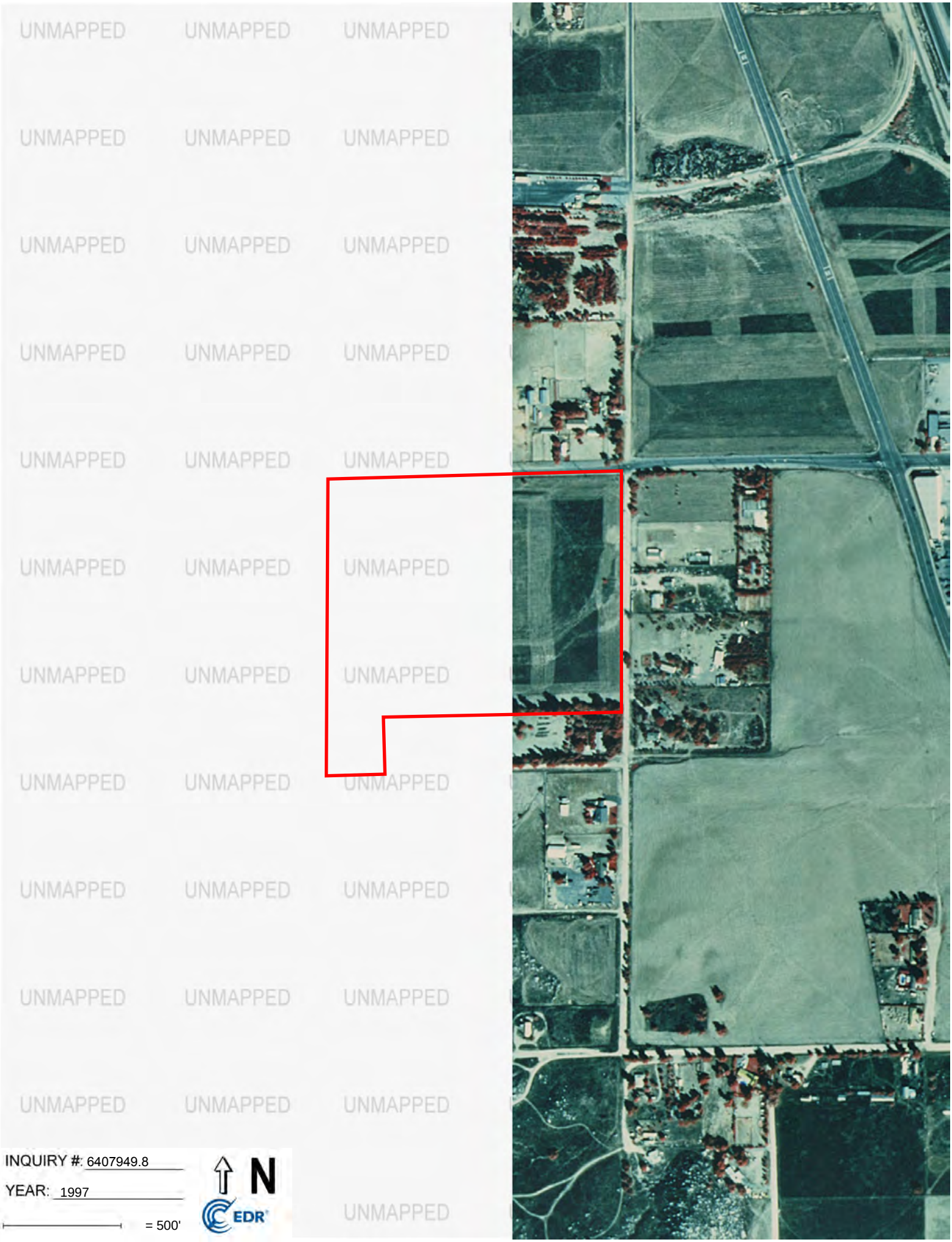
EDR


UNMAPPED
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YEAR: 1997
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EDR

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EDR

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YEAR: 1990
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EDR

INQUIRY #: 6407949.8
YEAR: 1989
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EDR

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EDR

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YEAR: 1978

= 500'

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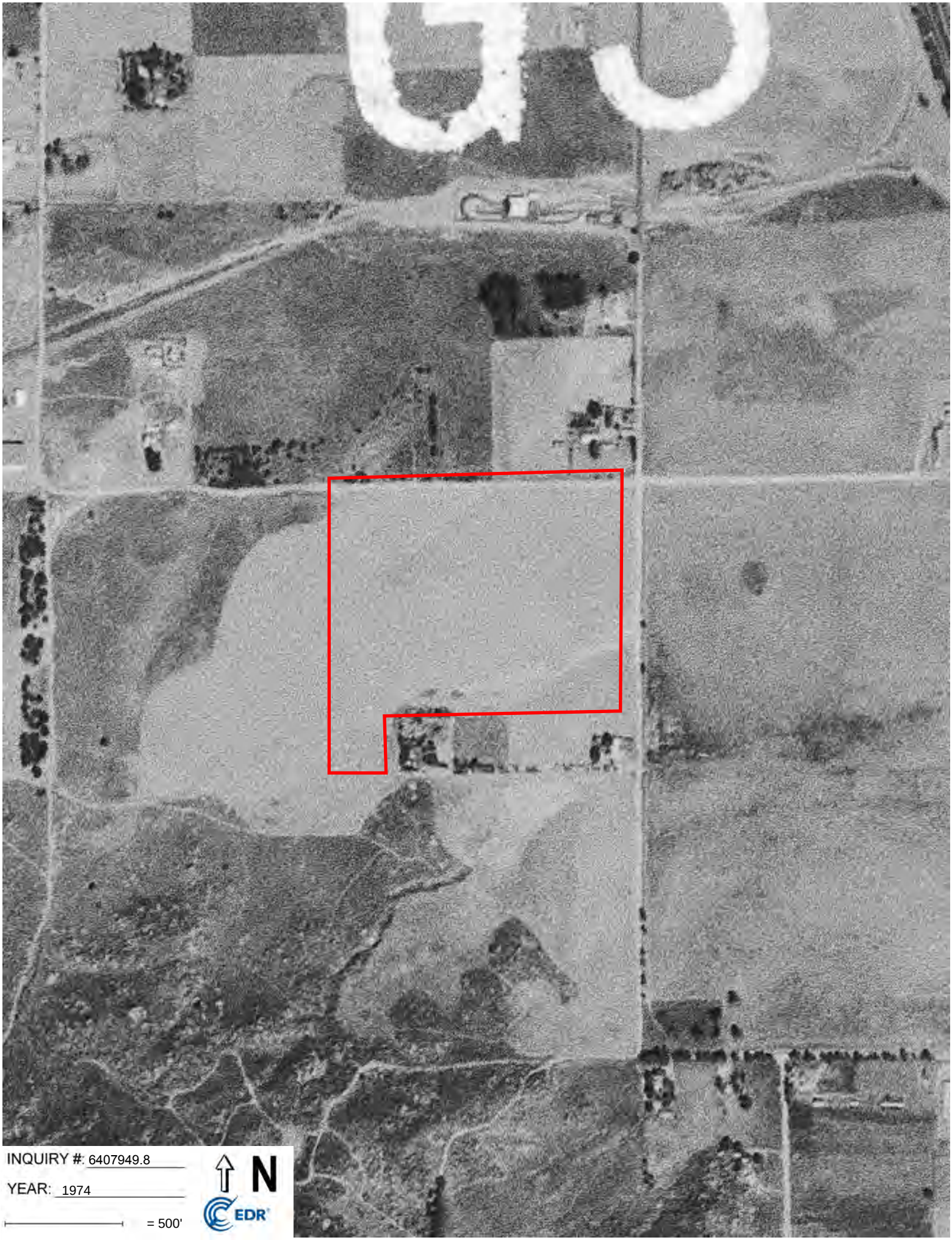
EDR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EDR

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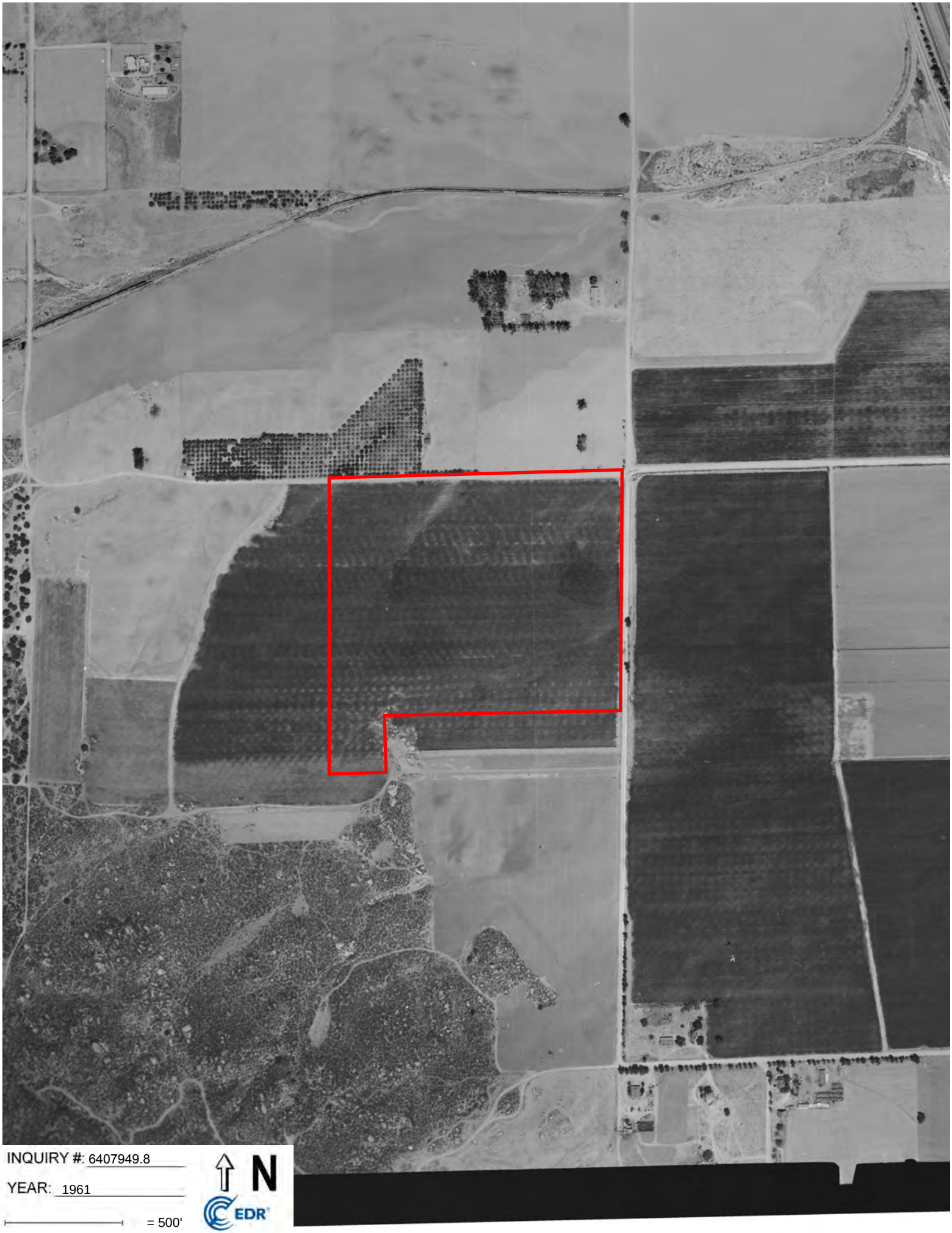
EDR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EDR

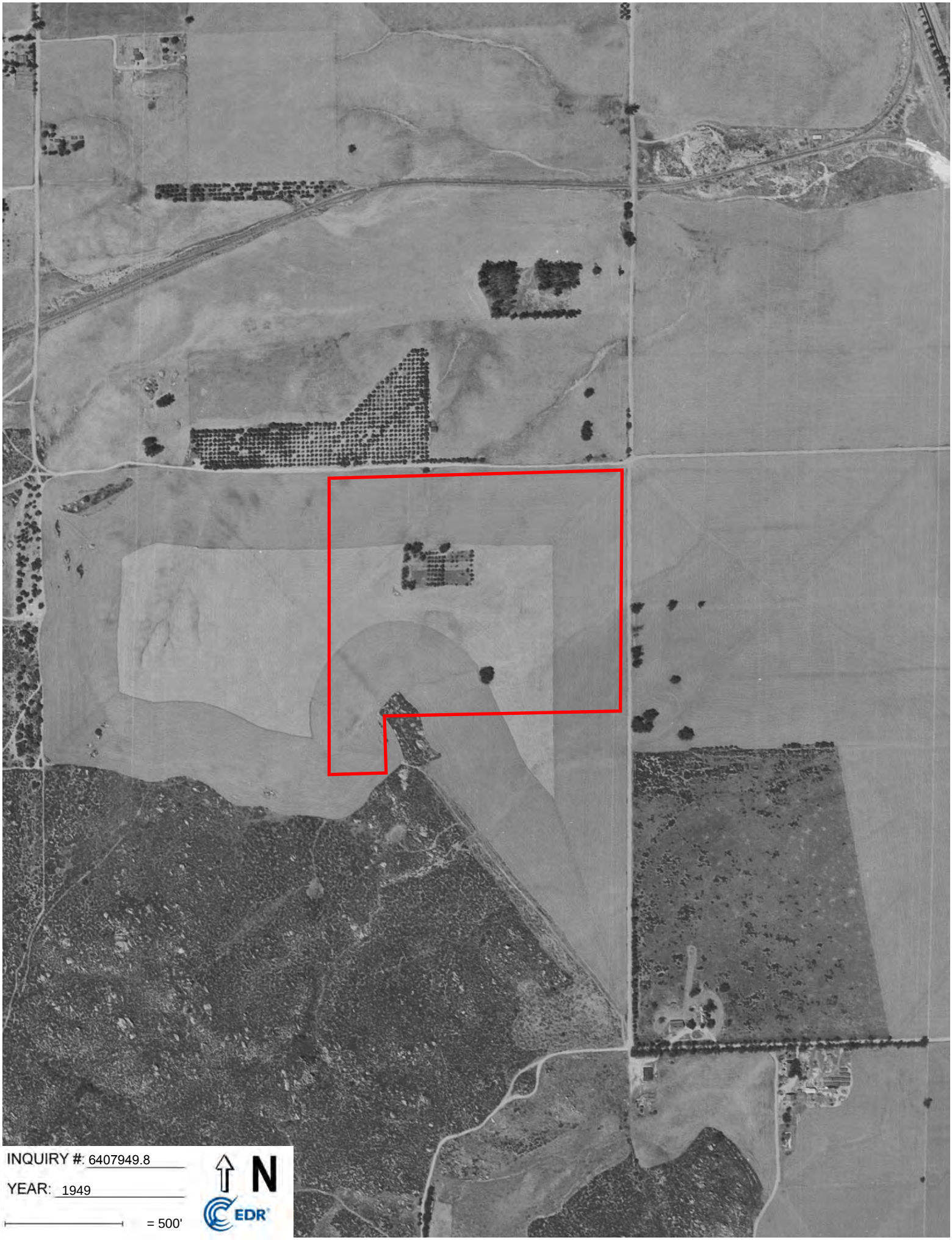
INQUIRY #: 6407949.8

YEAR: 1953

= 500'

N

EDR


INQUIRY #: 6407949.8
YEAR: 1949
= 500'
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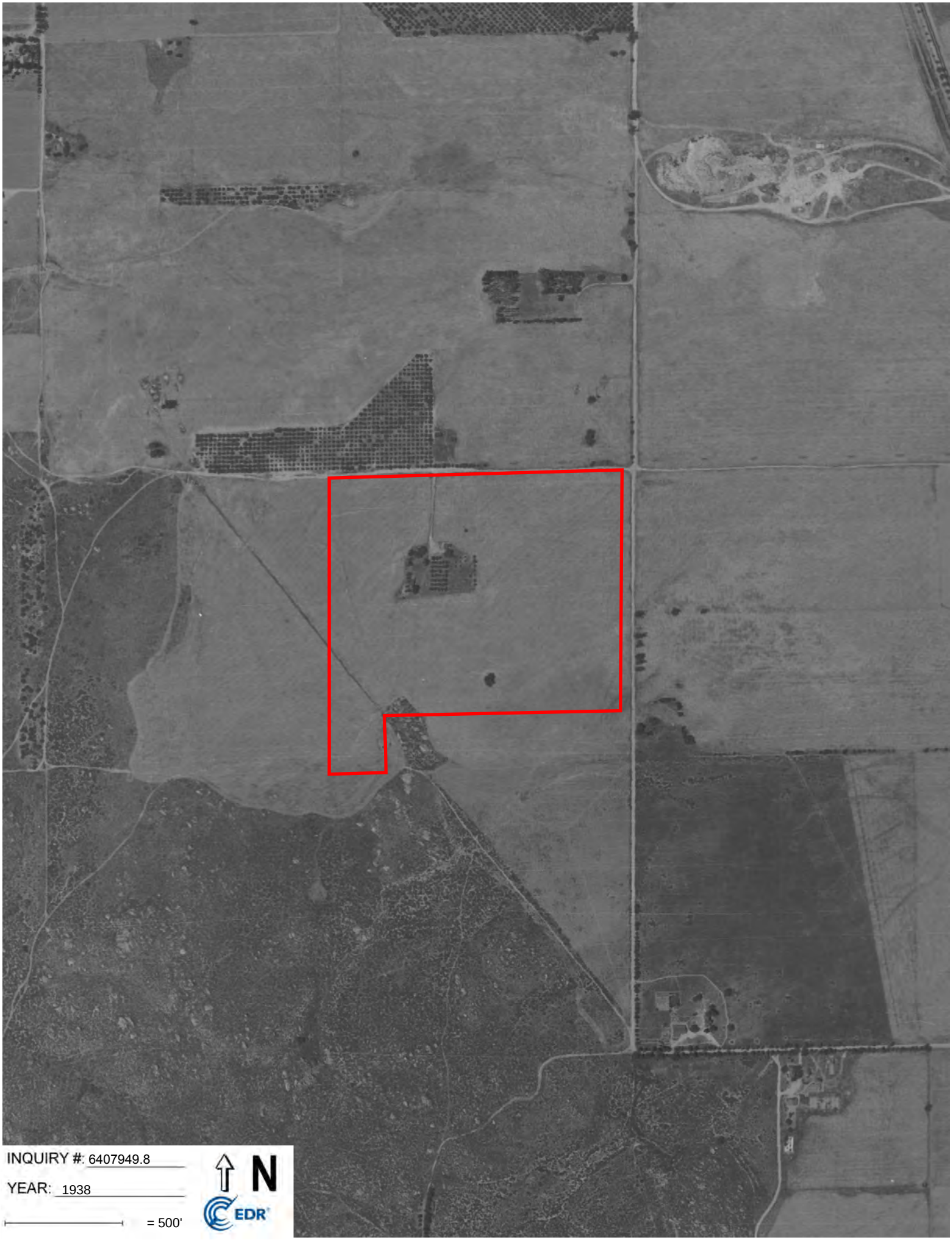
EDR


INQUIRY #: 6407949.8
YEAR: 1938
= 500'
N
EDR

Rider and Patterson
Rider and Patterson
Perris, CA 92570

Inquiry Number: 6407949.2s
March 17, 2021

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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GEOCHECK ADDENDUM

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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

RIDER AND PATTERSON
PERRIS, CA 92570

COORDINATES

Latitude (North):	33.8286750 - 33˚ 49' 43.23''
Longitude (West):	117.2550410 - 117˚ 15' 18.14''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	476399.8
UTM Y (Meters):	3742995.5
Elevation:	1561 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5641324 STEELE PEAK, CA
Version Date:	2012
East Map:	5641330 PERRIS, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
RIDER AND PATTERSON
PERRIS, CA 92570

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	MCANALLY ENTERPRISES	23480 RIDER ST	LUST, SWEEPS UST, CA FID UST, Cortese, HIST...	Lower	13, 0.002, NNE
A2	MCANALLY ENTERPRISES	23480 RIDER ST	LUST, CERS	Lower	13, 0.002, NNE
3	MWD- CHEMICAL UNLOAD	19765 PATTERSON AVE	RCRA NonGen / NLR	Lower	1265, 0.240, North
4	AOC LLC	19991 SEATON AVENUE	CORRACTS, RCRA-TSDF, RCRA-LQG, ENVIROSTOR, HIST...	Higher	1447, 0.274, WNW
5	VAL VERDE CONTINUATI	NEVADA AVENUE/MORGAN	ENVIROSTOR, SCH	Lower	3036, 0.575, NNE

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 generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-VSQG ..... RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROLS ..... Institutional Controls Sites List

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

EXECUTIVE SUMMARY

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

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

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
SWRCY..... Recycler 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
CERS HAZ WASTE..... CERS HAZ WASTE
US CDL..... National Clandestine Laboratory Register
PFAS..... PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

HIST UST..... Hazardous Substance Storage Container Database

EXECUTIVE SUMMARY

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
ECHO Enforcement & Compliance History Information
UXO Unexploded Ordnance Sites
FUELS PROGRAM EPA Fuels Program Registered Listing

EXECUTIVE SUMMARY

CA BOND EXP. PLAN	Bond Expenditure Plan
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
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)
MINES MRDS	Mineral Resources Data System
HWTS	Hazardous Waste Tracking System

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
RGA LUST	Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

EXECUTIVE SUMMARY

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 CORRACTS facilities list

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 12/14/2020 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC LLC EPA ID:: CAD059270975	***19991 SEATON AVENUE***	***WNW 1/4 - 1/2 (0.274 mi.)***	***4***	***16***

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: 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.

A review of the RCRA-TSDF list, as provided by EDR, and dated 12/14/2020 has revealed that there is 1 RCRA-TSDF site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC LLC EPA ID:: CAD059270975	***19991 SEATON AVENUE***	***WNW 1/4 - 1/2 (0.274 mi.)***	***4***	***16***

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 10/26/2020 has revealed that there are 2 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC LLC Facility Id: 80001432 Status: Active	***19991 SEATON AVENUE***	***WNW 1/4 - 1/2 (0.274 mi.)***	***4***	***16***

Lower Elevation	Address	Direction / Distance	Map ID	Page
VAL VERDE CONTINUATI Facility Id: 33010050 Status: No Further Action	***NEVADA AVENUE/MORGAN***	***NNE 1/2 - 1 (0.575 mi.)***	***5***	***100***

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 2 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global ID: T0606500587	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A1***	***9***
MCANALLY ENTERPRISES Database: RIVERSIDE CO. LUST, Date of Government Version: 01/13/2021 Database: LUST, Date of Government Version: 12/04/2020 Status: Completed - Case Closed Facility Id: 9915151 Global Id: T0606500587 Facility Status: 9	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A2***	***12***

ADDITIONAL ENVIRONMENTAL RECORDS

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.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES Status: A Tank Status: A Comp Number: 59854	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A1***	***9***

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.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES Facility Id: 33006812 Status: A	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A1***	***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 12/14/2020 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MWD- CHEMICAL UNLOAD EPA ID:: CAL000035451	19765 PATTERSON AVE	N 1/8 - 1/4 (0.240 mi.)	3	14

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 (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 12/17/2020 has revealed that there is 1 Cortese site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A1***	***9***

Cleanup Status: COMPLETED - CASE CLOSED

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 is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES Reg Id: 083303464T	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A1***	***9***

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 11/13/2020 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

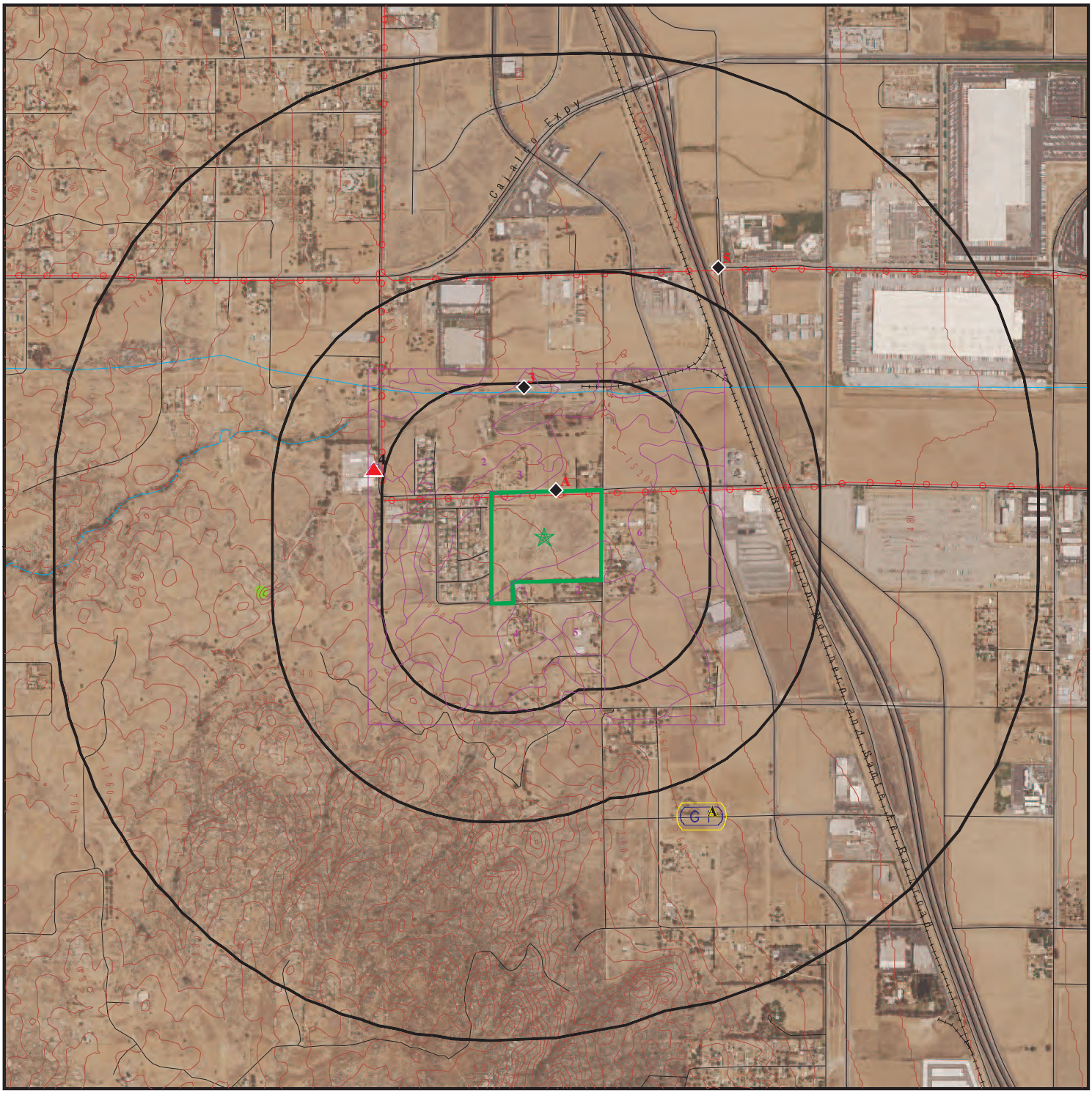
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC LLC EPA Id: CAD059270975 Cleanup Status: CLOSED	***19991 SEATON AVENUE***	***WNW 1/4 - 1/2 (0.274 mi.)***	***4***	***16***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 4 records.

Site Name	Database(s)
LEO'S AUTO REPAIR RIDER ST	CERS HAZ WASTE CIWQS CDL
4413 PATTERSON H&M	ECHO

OVERVIEW MAP - 6407949.2S



- 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

0 1/4 1/2 1 Miles

- 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

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: Rider and Patterson	CLIENT: Hazard Management Consulting
ADDRESS: Rider and Patterson Perris CA 92570	CONTACT: Troy Taylor INQUIRY #: 6407949.2s
LAT/LONG: 33.828675 / 117.255041	DATE: March 17, 2021 3:10 pm

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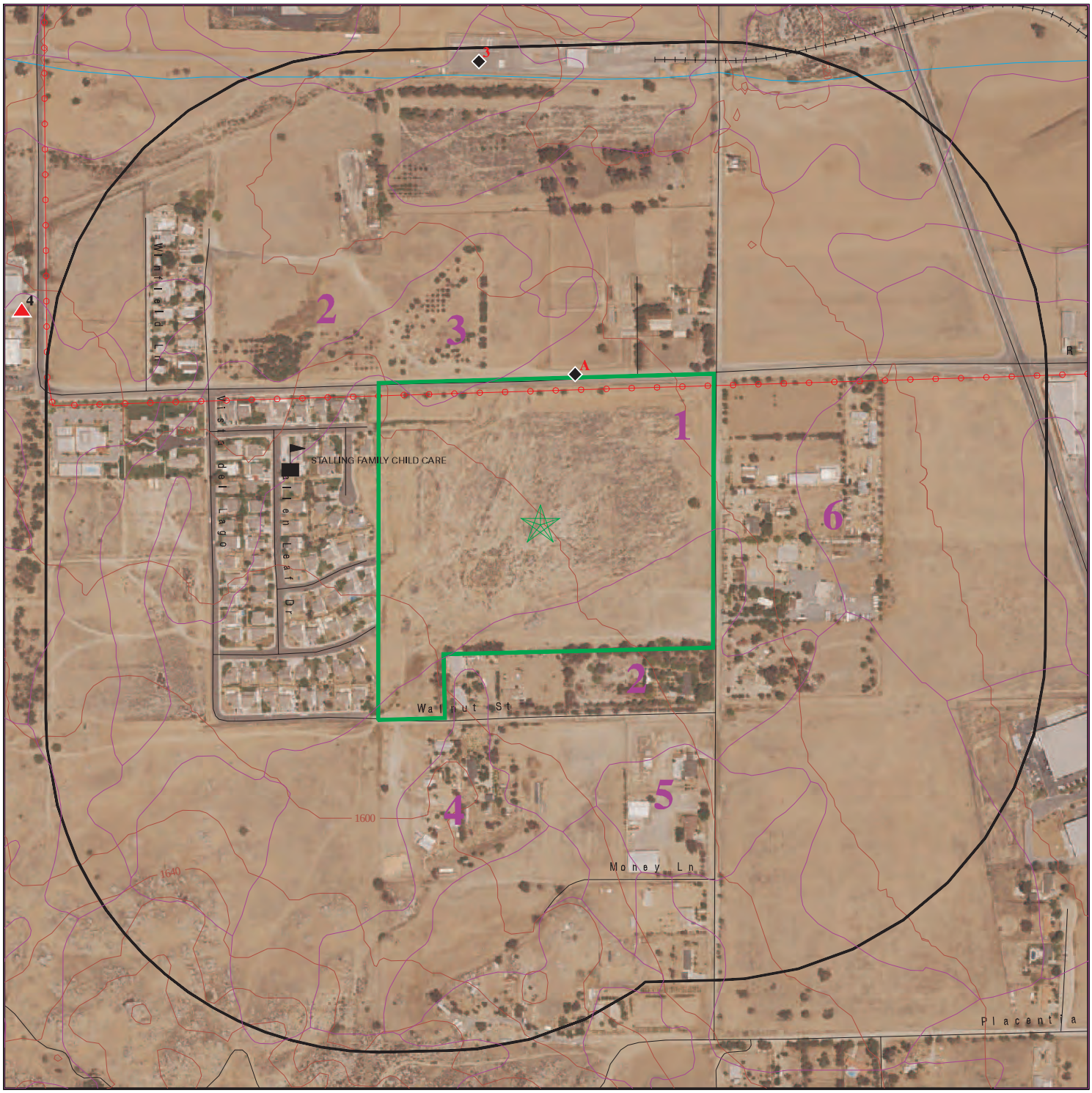
DETAIL MAP - 6407949.2S



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

0 1/16 1/8 1/4 Miles

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: Rider and Patterson	CLIENT: Hazard Management Consulting
ADDRESS: Rider and Patterson Perris CA 92570	CONTACT: Troy Taylor
LAT/LONG: 33.828675 / 117.255041	INQUIRY #: 6407949.2s
	DATE: March 17, 2021 3:12 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	1	0	NR	1
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	1	NR	NR	1
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	0	NR	NR	NR	0
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 CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	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	1	1	NR	2
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		2	0	0	NR	NR	2

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								
INDIAN VCP	0.500		0	0	0	NR	NR	0
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	0	NR	NR	0
HAULERS	0.001		0	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	0.001		0	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	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		1	0	NR	NR	NR	1
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		1	0	NR	NR	NR	1
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	1	NR	NR	NR	1
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	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	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		1	0	0	NR	NR	1
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	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		1	0	0	NR	NR	1
HWP	1.000		0	0	1	0	NR	1
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	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	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	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
HWTS	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	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	6	1	4	1	0	12

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

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1	**MCANALLY ENTERPRISES**	**LUST**	**S101590216**
NNE	**23480 RIDER ST**	**SWEEPS UST**	**N/A**
< 1/8	**PERRIS, CA 92570**	**CA FID UST**	
0.002 mi.		**Cortese**	
13 ft.	**Site 1 of 2 in cluster A**	**HIST CORTESE**	

Relative:
Lower

Actual:
1544 ft.

LUST REG 8:

Name:	MCANALLY ENTERPRISES
Address:	23480 RIDER ST
City:	PERRIS
Region:	8
County:	Riverside
Regional Board:	Santa Ana Region
Facility Status:	Case Closed
Case Number:	083303464T
Local Case Num:	99-15151
Case Type:	Soil only
Substance:	Diesel
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	HWY 215
Enf Type:	Not reported
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global ID:	T0606500587
How Stopped Date:	6/25/1998
Enter Date:	5/14/1999
Date Confirmation of Leak Began:	4/22/1999
Date Preliminary Assessment Began:	Not reported
Discover Date:	4/22/1999
Enforcement Date:	Not reported
Close Date:	8/4/2000
Date Prelim Assessment Workplan Submitted:	5/11/1999
Date Pollution Characterization Began:	1/19/2000
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	5/14/1999
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	33.8302077
Longitude:	-117.2522718
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	1
Max MTBE Soil:	.026
MTBE Fuel:	0
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	NOM
Staff Initials:	UNK
Lead Agency:	Local Agency

MCANALLY ENTERPRISES (Continued) **S101590216**

Local Agency: 33000L
Hydr Basin #: SAN JACINTO (8-5)
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Summary: Not reported

SWEEPS UST:
Name: FEED MILL
Address: 23480 RIDER ST
City: PERRIS
Status: Active
Comp Number: 59854
Number: 1
Board Of Equalization: 44-018415
Referral Date: 10-29-92
Action Date: 10-29-92
Created Date: 01-26-89
Owner Tank Id: 000495
SWRCB Tank Id: 33-000-059854-000001
Tank Status: A
Capacity: 10000
Active Date: 11-23-92
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 2

Name: FEED MILL
Address: 23480 RIDER ST
City: PERRIS
Status: Active
Comp Number: 59854
Number: 1
Board Of Equalization: 44-018415
Referral Date: 10-29-92
Action Date: 10-29-92
Created Date: 01-26-89
Owner Tank Id: 000495
SWRCB Tank Id: 33-000-059854-000002
Tank Status: A
Capacity: 10000
Active Date: 11-23-92
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 33006812
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 7146573987

MCANALLY ENTERPRISES (Continued) **S101590216**

Mail To:	Not reported
Mailing Address:	12215 SEVENTH/POBOX 1129
Mailing Address 2:	Not reported
Mailing City,St,Zip:	PERRIS 92370
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

CORTESE:

Name:	MCANALLY ENTERPRISES
Address:	23480 RIDER ST
City,State,Zip:	PERRIS, CA 92570
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0606500587
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

HIST CORTESE:

edr_fname:	MCANALLY ENTERPRISES
edr_fadd1:	23480
City,State,Zip:	PERRIS, CA 92370
Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	083303464T

A2 NNE < 1/8 0.002 mi. 13 ft. | **MCANALLY ENTERPRISES 23480 RIDER ST PERRIS, CA 92570** | **LUST CERS** | **S106410452 N/A**

Site 2 of 2 in cluster A

Relative: Lower

Actual: 1544 ft.

RIVERSIDE CO. LUST:

Name:	MCANALLY ENTERPRISE
Address:	23480 RIDER ST
City,State,Zip:	PERRIS, CA
Region:	RIVERSIDE
Facility ID:	9915151
Employee:	Boltinghous-LOP
Site Closed:	Yes
Case Type:	Soil only
Facility Status:	closed/action completed
Casetype Decode:	Soil only is impacted
Fstatus Decode:	Closed/Action completed

LUST:

Name:	MCANALLY ENTERPRISES
Address:	23480 RIDER ST
City,State,Zip:	PERRIS, CA 92570
Lead Agency:	RIVERSIDE COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606500587
Global Id:	T0606500587
Latitude:	33.8306219725169
Longitude:	-117.247480338449
Status:	Completed - Case Closed
Status Date:	08/04/2000
Case Worker:	RIV
RB Case Number:	083303464T
Local Agency:	RIVERSIDE COUNTY LOP
File Location:	Local Agency Warehouse
Local Case Number:	9915151
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

LUST:

Global Id:	T0606500587
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:	T0606500587
Action Type:	ENFORCEMENT
Date:	07/31/2000
Action:	File review - #RCDEH upload site file 8/27/2015

Global Id:	T0606500587
Action Type:	Other
Date:	04/22/1999

MCANALLY ENTERPRISES (Continued) **S106410452**

Action: Leak Discovery

Global Id: T0606500587
Action Type: Other
Date: 06/25/1998
Action: Leak Stopped

Global Id: T0606500587
Action Type: Other
Date: 04/22/1999
Action: Leak Reported

Global Id: T0606500587
Action Type: ENFORCEMENT
Date: 08/01/2000
Action: Closure/No Further Action Letter - #Riv Co Closure

LUST:
Global Id: T0606500587
Status: Open - Case Begin Date
Status Date: 06/25/1998

Global Id: T0606500587
Status: Open - Site Assessment
Status Date: 04/22/1999

Global Id: T0606500587
Status: Open - Site Assessment
Status Date: 05/11/1999

Global Id: T0606500587
Status: Open - Site Assessment
Status Date: 01/19/2000

Global Id: T0606500587
Status: Completed - Case Closed
Status Date: 08/04/2000

CERS:
Name: MCANALLY ENTERPRISES
Address: 23480 RIDER ST
City,State,Zip: PERRIS, CA 92570
Site ID: 246878
CERS ID: T0606500587
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

3 North 1/8-1/4 0.240 mi. 1265 ft. | **MWD- CHEMICAL UNLOADING FACILITY**
19765 PATTERSON AVE
PERRIS, CA 92570 | **RCRA NonGen / NLR** | **1024787652**
CAL000035451

Relative: Lower

Actual: 1524 ft.

RCRA NonGen / NLR:

Date Form Received by Agency:	1990-07-05 00:00:00.0
Handler Name:	MWD- CHEMICAL UNLOADING FACILITY
Handler Address:	19765 PATTERSON AVE
Handler City,State,Zip:	PERRIS, CA 92570-9708
EPA ID:	CAL000035451
Contact Name:	EMERSON LEGO
Contact Address:	PO BOX 54153
Contact City,State,Zip:	LOS ANGELES, CA 90054-0153
Contact Telephone:	213-217-6281
Contact Fax:	Not reported
Contact Email:	ELEGO@MWDH2O.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	PO BOX 54153
Mailing City,State,Zip:	LOS ANGELES, CA 90054-0000
Owner Name:	METROPOLITAN WATER DISTICT OF SO
Owner Type:	Other
Operator Name:	EMERSON LEGO
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported

MWD- CHEMICAL UNLOADING FACILITY (Continued) **1024787652**

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2018-09-05 15:41:23.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	METROPOLITAN WATER DISTICT OF SO
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	700 N ALAMEDA ST
Owner/Operator City,State,Zip:	LOS ANGELES, CA 90012-3352
Owner/Operator Telephone:	213-217-6000
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	EMERSON LEGO
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	PO BOX 54153
Owner/Operator City,State,Zip:	LOS ANGELES, CA 90054-0153
Owner/Operator Telephone:	213-217-6281
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

MWD- CHEMICAL UNLOADING FACILITY (Continued) **1024787652**

Historic Generators:

Receive Date:	1990-07-05 00:00:00.0
Handler Name:	MWD- CHEMICAL UNLOADING FACILITY
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	56299
NAICS Description:	ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

4
WNW
1/4-1/2
0.274 mi.
1447 ft.

Relative:
Higher

Actual:
1562 ft.

AOC LLC
19991 SEATON AVENUE
PERRIS, CA 92570

CORRACTS **1000238960**
RCRA-TSDF **CAD059270975**
RCRA-LQG
ENVIROSTOR
HIST UST
RAATS
EMI
HWP
NPDES
CIWQS
CERS

CORRACTS:

Name:	AOC LLC
Address:	19991 SEATON AVENUE
Address 2:	Not reported
Area Name:	ENTIRE FACILITY
Corrective Action:	CA029ST
Actual Date:	1990-01-01 00:00:00.0
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Not reported
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	AOC LLC
Address:	19991 SEATON AVENUE
Address 2:	Not reported
Area Name:	ENTIRE FACILITY
Corrective Action:	CA050
Actual Date:	1988-10-24 00:00:00.0
Air Release Indicator:	Not reported

AOC LLC (Continued) **1000238960**

Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: AOC LLC
Address: 19991 SEATON AVENUE
Address 2: Not reported
Area Name: ENTIRE FACILITY
Corrective Action: CA075LO
Actual Date: 1992-07-16 00:00:00.0
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: AOC LLC
Address: 19991 SEATON AVENUE
Address 2: Not reported
Area Name: ENTIRE FACILITY
Corrective Action: CA225NR
Actual Date: 1992-07-16 00:00:00.0
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: AOC LLC
Address: 19991 SEATON AVENUE
Address 2: Not reported
Area Name: ENTIRE FACILITY
Corrective Action: CA999
Actual Date: 1988-10-24 00:00:00.0
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

RCRA-LQG:
Date Form Received by Agency: 2020-10-01 00:00:00.0
Handler Name: AOC LLC
Handler Address: 19991 SEATON AVENUE
Handler City,State,Zip: PERRIS, CA 92570-0000
EPA ID: CAD059270975
Contact Name: JUAN F MONTALVO
Contact Address: SEATON AVENUE
Contact City,State,Zip: PERRIS, CA 92570-0000
Contact Telephone: 951-943-9708
Contact Fax: 951-657-8370
Contact Email: JMONTALVO@AOCALIANCYS.COM
Contact Title: ENVIRONMENTAL HEALTH AND SAFETY LEADER
EPA Region: 09
Land Type: Private
Federal Waste Generator Description: Large Quantity Generator
Non-Notifier: Not reported
Biennial Report Cycle: 2019
Accessibility: Not reported
Active Site Indicator: Handler Activities

AOC LLC (Continued) **1000238960**

State District Owner:	Not reported
State District:	Not reported
Mailing Address:	SEATON AVENUE
Mailing City,State,Zip:	PERRIS, CA 92570-0000
Owner Name:	THE ALPHA CORPORATION
Owner Type:	Private
Operator Name:	AOC, LLC
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Incineration, Storage
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Incineration, Storage
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	Yes
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	Yes
Corrective Action Priority Ranking:	Low
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2020-12-08 19:51:48.0
Recognized Trader-Importer:	No

AOC LLC (Continued) **1000238960**

Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Biennial: List of Years
Year: 2017

Click Here for Biennial Reporting System Data:
Year: 2015

Click Here for Biennial Reporting System Data:
Year: 2013

Click Here for Biennial Reporting System Data:
Year: 2011

Click Here for Biennial Reporting System Data:
Year: 2009

Click Here for Biennial Reporting System Data:
Year: 2007

Click Here for Biennial Reporting System Data:
Year: 2005

Click Here for Biennial Reporting System Data:
Year: 2001

Click Here for Biennial Reporting System Data:

Hazardous Waste Summary:
Waste Code: D001
Waste Description: IGNITABLE WASTE

Waste Code: D009
Waste Description: MERCURY

Waste Code: U107
Waste Description: 1,2-BENZENEDICARBOXYLIC ACID, DIOCTYL ESTER (OR) DI-N-OCTYL PHTHALATE

Waste Code: U147
Waste Description: 2,5-FURANDIONE (OR) MALEIC ANHYDRIDE

Waste Code: U190
Waste Description: 1,3-ISOBENZOFURANDIONE (OR) PHTHALIC ANHYDRIDE

Handler - Owner Operator:
Owner/Operator Indicator: Owner
Owner/Operator Name: THE ALPHA CORPORATION
Legal Status: Private
Date Became Current: 1997-05-01 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: 950 HIGHWAY 57 EAST

AOC LLC (Continued) **1000238960**

Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2850
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2850
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2850
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	JMONTALVO@AOC-RESINS.COM
Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private

AOC LLC (Continued) **1000238960**

Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	AOC, LLC
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	19991 SEATON AVENUE
Owner/Operator City,State,Zip:	PERRIS, CA 92570
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORP
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2859
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	AOC LLC
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

AOC LLC (Continued) **1000238960**

Owner/Operator Indicator:	Owner
Owner/Operator Name:	ALPHA OWENS CORNING L L C
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	PO BOX 610
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38027-0610
Owner/Operator Telephone:	901-854-2800
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	AOC, LLC
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	AOC, LLC
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	19991 SEATON AVENUE
Owner/Operator City,State,Zip:	PERRIS, CA 92370-0000
Owner/Operator Telephone:	951-943-9708
Owner/Operator Telephone Ext:	Not reported

AOC LLC (Continued) **1000238960**

Owner/Operator Fax:	951-657-8370
Owner/Operator Email:	JMONTALVO@AOC-RESINS.COM
Owner/Operator Indicator:	Operator
Owner/Operator Name:	AOC, LLC
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	19991 SEATON AVENUE
Owner/Operator City,State,Zip:	PERRIS, CA 92570-0000
Owner/Operator Telephone:	951-943-9708
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	951-657-8370
Owner/Operator Email:	JMONTALVO@AOC-RESINS.COM
Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2850
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2850
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	JMONTALVO@AOC-RESINS.COM
Owner/Operator Indicator:	Operator
Owner/Operator Name:	ALPHA CHEMICAL CORPORATION
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	PO DRAWER A

AOC LLC (Continued) **1000238960**

Owner/Operator City,State,Zip: CITY NOT REPORTED, TN 99999
Owner/Operator Telephone: 901-853-2450
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 2010-02-08 00:00:00.0
Handler Name: AOC, LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2012-02-28 00:00:00.0
Handler Name: AOC, LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2014-03-01 00:00:00.0
Handler Name: AOC, LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2016-01-19 00:00:00.0
Handler Name: AOC, LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported

AOC LLC (Continued) **1000238960**

Electronic Manifest Broker: Not reported

Receive Date: 2018-01-25 00:00:00.0
Handler Name: AOC LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 2020-10-01 00:00:00.0
Handler Name: AOC LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 1996-09-01 00:00:00.0
Handler Name: ALPHA OWENS CORNING L L C
Federal Waste Generator Description: Large Quantity Generator
State District Owner: CA
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2006-02-27 00:00:00.0
Handler Name: AOC, L.L.C.
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 1994-10-17 00:00:00.0
Handler Name: ALPHA OWENS CORNING L L C
Federal Waste Generator Description: Small Quantity Generator

AOC LLC (Continued) **1000238960**

State District Owner:	CA
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	1990-04-12 00:00:00.0
Handler Name: ALPHA RESINS	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	1992-02-26 00:00:00.0
Handler Name: ALPHA RESINS	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	1994-03-29 00:00:00.0
Handler Name: ALPHA RESINS CORP	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	1999-03-04 00:00:00.0
Handler Name: ALPHA/OWENS-CORNING L.L.C	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No

AOC LLC (Continued) **1000238960**

Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2002-03-01 00:00:00.0
Handler Name: AOC, L.L.C.	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2006-02-27 00:00:00.0
Handler Name: AOC, L.L.C.	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2008-02-27 00:00:00.0
Handler Name: AOC, L.L.C.	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	325211
NAICS Description:	PLASTICS MATERIAL AND RESIN MANUFACTURING

Facility Has Received Notices of Violation:

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	2009-01-06 00:00:00.0
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State

AOC LLC (Continued) **1000238960**

Scheduled Compliance Date: 2009-03-06 00:00:00.0
Enforcement Identifier: 601
Date of Enforcement Action: 2009-01-06 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 1989-01-11 00:00:00.0
Actual Return to Compliance Date: 1989-05-12 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported

AOC LLC (Continued) **1000238960**

SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	1992-12-02 00:00:00.0
Actual Return to Compliance Date:	1993-01-07 00:00:00.0
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	1992-12-17 00:00:00.0
Enforcement Identifier:	002
Date of Enforcement Action:	1992-12-02 00:00:00.0
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person:	R9STA
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	2400
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	LDR - General
Date Violation was Determined:	1988-06-07 00:00:00.0
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State

AOC LLC (Continued) **1000238960**

Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported

AOC LLC (Continued) **1000238960**

SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	2009-01-06 00:00:00.0
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Enforcement Identifier:	601
Date of Enforcement Action:	2009-01-06 00:00:00.0
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	1988-06-07 00:00:00.0
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State

AOC LLC (Continued) **1000238960**

Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Transporters - General
Date Violation was Determined: 1988-06-07 00:00:00.0
Actual Return to Compliance Date: 1988-08-01 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported

AOC LLC (Continued) **1000238960**

SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 2009-01-06 00:00:00.0
Actual Return to Compliance Date: 2009-03-06 00:00:00.0
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 2009-03-06 00:00:00.0
Enforcement Identifier: 601
Date of Enforcement Action: 2009-01-06 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Transporters - General
Date Violation was Determined: 1989-01-11 00:00:00.0
Actual Return to Compliance Date: 1989-05-12 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State

AOC LLC (Continued) **1000238960**

Scheduled Compliance Date: 1989-03-24 00:00:00.0
Enforcement Identifier: 001
Date of Enforcement Action: 1989-02-24 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 1992-12-02 00:00:00.0
Actual Return to Compliance Date: 1993-01-07 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 1992-12-17 00:00:00.0
Enforcement Identifier: 002
Date of Enforcement Action: 1992-12-02 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported

AOC LLC (Continued) **1000238960**

SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	2400
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	2009-01-06 00:00:00.0
Actual Return to Compliance Date:	2009-02-19 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	EPA

AOC LLC (Continued) **1000238960**

Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported

AOC LLC (Continued) **1000238960**

SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 1988-06-07 00:00:00.0
Actual Return to Compliance Date: 1988-08-01 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD IS-Preparedness and Prevention
Date Violation was Determined: 2009-01-06 00:00:00.0
Actual Return to Compliance Date: 2009-02-19 00:00:00.0
Return to Compliance Qualifier: Documented
Violation Responsible Agency: EPA

AOC LLC (Continued) **1000238960**

Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 1989-01-11 00:00:00.0
Actual Return to Compliance Date: 1989-03-24 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported

AOC LLC (Continued) **1000238960**

SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD IS-Container Use and Management
Date Violation was Determined:	2009-01-06 00:00:00.0
Actual Return to Compliance Date:	2009-02-19 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	2009-01-06 00:00:00.0
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State

AOC LLC (Continued) **1000238960**

Scheduled Compliance Date: 2009-03-06 00:00:00.0
Enforcement Identifier: 601
Date of Enforcement Action: 2009-01-06 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 2004-11-04 00:00:00.0
Actual Return to Compliance Date: 2004-12-03 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 501
Date of Enforcement Action: 2004-11-04 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported

AOC LLC (Continued) **1000238960**

SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 1989-01-11 00:00:00.0
Actual Return to Compliance Date: 1989-05-12 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 1989-03-24 00:00:00.0
Enforcement Identifier: 001
Date of Enforcement Action: 1989-02-24 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported

AOC LLC (Continued) **1000238960**

Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 2009-01-06 00:00:00.0
Actual Return to Compliance Date: 2009-03-06 00:00:00.0
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 2009-03-06 00:00:00.0
Enforcement Identifier: 601
Date of Enforcement Action: 2009-01-06 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported

AOC LLC (Continued) **1000238960**

SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Evaluation Action Summary:

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1989-01-11 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1989-05-12 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1992-10-19 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1993-01-07 00:00:00.0
Scheduled Compliance Date:	1992-12-17 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1988-06-07 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA

AOC LLC (Continued) **1000238960**

Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1989-01-09 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1988-06-07 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1988-06-07 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported

AOC LLC (Continued) **1000238960**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	1989-01-11 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1989-05-12 00:00:00.0
Scheduled Compliance Date:	1989-03-24 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	1992-10-19 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1993-01-07 00:00:00.0
Scheduled Compliance Date:	1992-12-17 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	1992-11-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	EPA

AOC LLC (Continued) **1000238960**

Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CMCDO
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-02-19 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2019-10-22 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1988-06-07 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CMCDO
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-02-19 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1989-01-11 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1989-03-24 00:00:00.0

AOC LLC (Continued) **1000238960**

Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CMCDO
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-02-19 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2004-11-04 00:00:00.0
Evaluation Responsible Agency:	State Contractor/Grantee
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2004-12-03 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1989-01-11 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1989-05-12 00:00:00.0
Scheduled Compliance Date:	1989-03-24 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

AOC LLC (Continued) **1000238960**

Evaluation Date:	2015-08-13 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

AOC LLC (Continued) **1000238960**

RCRA-LQG:

Date Form Received by Agency:	2020-10-01 00:00:00.0
Handler Name:	AOC LLC
Handler Address:	19991 SEATON AVENUE
Handler City,State,Zip:	PERRIS, CA 92570-0000
EPA ID:	CAD059270975
Contact Name:	JUAN F MONTALVO
Contact Address:	SEATON AVENUE
Contact City,State,Zip:	PERRIS, CA 92570-0000
Contact Telephone:	951-943-9708
Contact Fax:	951-657-8370
Contact Email:	JMONTALVO@AOCALIANCYS.COM
Contact Title:	ENVIRONMENTAL HEALTH AND SAFETY LEADER
EPA Region:	09
Land Type:	Private
Federal Waste Generator Description:	Large Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	2019
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	SEATON AVENUE
Mailing City,State,Zip:	PERRIS, CA 92570-0000
Owner Name:	THE ALPHA CORPORATION
Owner Type:	Private
Operator Name:	AOC, LLC
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Incineration, Storage
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Incineration, Storage
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported

AOC LLC (Continued) **1000238960**

202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	Yes
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	Yes
Corrective Action Priority Ranking:	Low
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2020-12-08 19:51:48.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Biennial: List of Years
Year: 2017

Click Here for Biennial Reporting System Data:
Year: 2015

Click Here for Biennial Reporting System Data:
Year: 2013

Click Here for Biennial Reporting System Data:
Year: 2011

Click Here for Biennial Reporting System Data:
Year: 2009

Click Here for Biennial Reporting System Data:
Year: 2007

Click Here for Biennial Reporting System Data:
Year: 2005

Click Here for Biennial Reporting System Data:
Year: 2001

Click Here for Biennial Reporting System Data:

Hazardous Waste Summary:
Waste Code: D001
Waste Description: IGNITABLE WASTE

AOC LLC (Continued) **1000238960**

Waste Code: D009
Waste Description: MERCURY

Waste Code: U107
Waste Description: 1,2-BENZENEDICARBOXYLIC ACID, DIOCTYL ESTER (OR) DI-N-OCTYL PHTHALATE

Waste Code: U147
Waste Description: 2,5-FURANDIONE (OR) MALEIC ANHYDRIDE

Waste Code: U190
Waste Description: 1,3-ISOBENZOFURANDIONE (OR) PHTHALIC ANHYDRIDE

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2850
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2850

AOC LLC (Continued) **1000238960**

Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2850
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	JMONTALVO@AOC-RESINS.COM
Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	AOC, LLC
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	19991 SEATON AVENUE
Owner/Operator City,State,Zip:	PERRIS, CA 92570
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORP
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2859
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	AOC LLC
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported

AOC LLC (Continued) **1000238960**

Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	ALPHA OWENS CORNING L L C
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	PO BOX 610
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38027-0610
Owner/Operator Telephone:	901-854-2800
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	AOC, LLC
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	THE ALPHA CORPORATION

AOC LLC (Continued) **1000238960**

Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	AOC, LLC
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	19991 SEATON AVENUE
Owner/Operator City,State,Zip:	PERRIS, CA 92370-0000
Owner/Operator Telephone:	951-943-9708
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	951-657-8370
Owner/Operator Email:	JMONTALVO@AOC-RESINS.COM

Owner/Operator Indicator:	Operator
Owner/Operator Name:	AOC, LLC
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	19991 SEATON AVENUE
Owner/Operator City,State,Zip:	PERRIS, CA 92570-0000
Owner/Operator Telephone:	951-943-9708
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	951-657-8370
Owner/Operator Email:	JMONTALVO@AOC-RESINS.COM

Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2850
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

AOC LLC (Continued) **1000238960**

Owner/Operator Indicator:	Owner
Owner/Operator Name:	THE ALPHA CORPORATION
Legal Status:	Private
Date Became Current:	1997-05-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	950 HIGHWAY 57 EAST
Owner/Operator City,State,Zip:	COLLIERVILLE, TN 38017
Owner/Operator Telephone:	901-854-2850
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	JMONTALVO@AOC-RESINS.COM

Owner/Operator Indicator:	Operator
Owner/Operator Name:	ALPHA CHEMICAL CORPORATION
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	PO DRAWER A
Owner/Operator City,State,Zip:	CITY NOT REPORTED, TN 99999
Owner/Operator Telephone:	901-853-2450
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	2010-02-08 00:00:00.0
Handler Name: AOC, LLC	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2012-02-28 00:00:00.0
Handler Name: AOC, LLC	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2014-03-01 00:00:00.0
Handler Name: AOC, LLC	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No

AOC LLC (Continued) **1000238960**

Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2016-01-19 00:00:00.0
Handler Name: AOC, LLC	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2018-01-25 00:00:00.0
Handler Name: AOC LLC	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

Receive Date:	2020-10-01 00:00:00.0
Handler Name: AOC LLC	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

Receive Date:	1996-09-01 00:00:00.0
Handler Name: ALPHA OWENS CORNING L L C	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	CA
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported

AOC LLC (Continued) **1000238960**

Electronic Manifest Broker: Not reported

Receive Date: 2006-02-27 00:00:00.0
Handler Name: AOC, L.L.C.
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 1994-10-17 00:00:00.0
Handler Name: ALPHA OWENS CORNING L L C
Federal Waste Generator Description: Small Quantity Generator
State District Owner: CA
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 1990-04-12 00:00:00.0
Handler Name: ALPHA RESINS
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 1992-02-26 00:00:00.0
Handler Name: ALPHA RESINS
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 1994-03-29 00:00:00.0
Handler Name: ALPHA RESINS CORP
Federal Waste Generator Description: Large Quantity Generator

AOC LLC (Continued) **1000238960**

State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 1999-03-04 00:00:00.0
Handler Name: ALPHA/OWENS-CORNING L.L.C
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2002-03-01 00:00:00.0
Handler Name: AOC, L.L.C.
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2006-02-27 00:00:00.0
Handler Name: AOC, L.L.C.
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2008-02-27 00:00:00.0
Handler Name: AOC, L.L.C.
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No

AOC LLC (Continued) **1000238960**

Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 325211
NAICS Description: PLASTICS MATERIAL AND RESIN MANUFACTURING

Facility Has Received Notices of Violation:
Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 2009-01-06 00:00:00.0
Actual Return to Compliance Date: 2009-03-06 00:00:00.0
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 2009-03-06 00:00:00.0
Enforcement Identifier: 601
Date of Enforcement Action: 2009-01-06 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 1989-01-11 00:00:00.0
Actual Return to Compliance Date: 1989-05-12 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported

AOC LLC (Continued) **1000238960**

Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 1992-12-02 00:00:00.0
Actual Return to Compliance Date: 1993-01-07 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 1992-12-17 00:00:00.0
Enforcement Identifier: 002
Date of Enforcement Action: 1992-12-02 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported

AOC LLC (Continued) **1000238960**

SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	2400
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	LDR - General
Date Violation was Determined:	1988-06-07 00:00:00.0
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported

AOC LLC (Continued) **1000238960**

Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 2009-01-06 00:00:00.0
Actual Return to Compliance Date: 2009-03-06 00:00:00.0
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 2009-03-06 00:00:00.0
Enforcement Identifier: 601
Date of Enforcement Action: 2009-01-06 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported

AOC LLC (Continued) **1000238960**

SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	1988-06-07 00:00:00.0
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Transporters - General
Date Violation was Determined:	1988-06-07 00:00:00.0
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported

AOC LLC (Continued) **1000238960**

Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	2009-01-06 00:00:00.0
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Enforcement Identifier:	601
Date of Enforcement Action:	2009-01-06 00:00:00.0
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported

AOC LLC (Continued) **1000238960**

SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Transporters - General
Date Violation was Determined: 1989-01-11 00:00:00.0
Actual Return to Compliance Date: 1989-05-12 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 1989-03-24 00:00:00.0
Enforcement Identifier: 001
Date of Enforcement Action: 1989-02-24 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 1992-12-02 00:00:00.0
Actual Return to Compliance Date: 1993-01-07 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 1992-12-17 00:00:00.0

AOC LLC (Continued) **1000238960**

Enforcement Identifier:	002
Date of Enforcement Action:	1992-12-02 00:00:00.0
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person:	R9STA
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	2400
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported

AOC LLC (Continued) **1000238960**

SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	2009-01-06 00:00:00.0
Actual Return to Compliance Date:	2009-02-19 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported

AOC LLC (Continued) **1000238960**

Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	LDR - General
Date Violation was Determined:	1988-06-07 00:00:00.0
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported

AOC LLC (Continued) **1000238960**

SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD IS-Preparedness and Prevention
Date Violation was Determined: 2009-01-06 00:00:00.0
Actual Return to Compliance Date: 2009-02-19 00:00:00.0
Return to Compliance Qualifier: Documented
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: LDR - General
Date Violation was Determined: 1989-01-11 00:00:00.0
Actual Return to Compliance Date: 1989-03-24 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported

AOC LLC (Continued) **1000238960**

Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD IS-Container Use and Management
Date Violation was Determined: 2009-01-06 00:00:00.0
Actual Return to Compliance Date: 2009-02-19 00:00:00.0
Return to Compliance Qualifier: Documented
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported

AOC LLC (Continued) **1000238960**

SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 2009-01-06 00:00:00.0
Actual Return to Compliance Date: 2009-03-06 00:00:00.0
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 2009-03-06 00:00:00.0
Enforcement Identifier: 601
Date of Enforcement Action: 2009-01-06 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 2004-11-04 00:00:00.0
Actual Return to Compliance Date: 2004-12-03 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported

AOC LLC (Continued) **1000238960**

Enforcement Identifier: 501
Date of Enforcement Action: 2004-11-04 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 1989-01-11 00:00:00.0
Actual Return to Compliance Date: 1989-05-12 00:00:00.0
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 1989-03-24 00:00:00.0
Enforcement Identifier: 001
Date of Enforcement Action: 1989-02-24 00:00:00.0
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R9STA
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported

AOC LLC (Continued) **1000238960**

SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 2009-01-06 00:00:00.0
Actual Return to Compliance Date: 2009-03-06 00:00:00.0
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: 2009-03-06 00:00:00.0

AOC LLC (Continued) **1000238960**

Enforcement Identifier:	601
Date of Enforcement Action:	2009-01-06 00:00:00.0
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Evaluation Action Summary:

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1989-01-11 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1989-05-12 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

AOC LLC (Continued) **1000238960**

Evaluation Date:	1992-10-19 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1993-01-07 00:00:00.0
Scheduled Compliance Date:	1992-12-17 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1988-06-07 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1989-01-09 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1988-06-07 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA

AOC LLC (Continued) **1000238960**

Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1988-06-07 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1989-01-11 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1989-05-12 00:00:00.0
Scheduled Compliance Date:	1989-03-24 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1992-10-19 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1993-01-07 00:00:00.0
Scheduled Compliance Date:	1992-12-17 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported

AOC LLC (Continued) **1000238960**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	1992-11-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CMCDO
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-02-19 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	2019-10-22 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	1988-06-07 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1988-08-01 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	EPA

AOC LLC (Continued) **1000238960**

Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CMCDO
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-02-19 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	1989-01-11 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1989-03-24 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CMCDO
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-02-19 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2004-11-04 00:00:00.0
Evaluation Responsible Agency:	State Contractor/Grantee
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2004-12-03 00:00:00.0

AOC LLC (Continued) **1000238960**

Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	1989-01-11 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9STA
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	1989-05-12 00:00:00.0
Scheduled Compliance Date:	1989-03-24 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	2015-08-13 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	2009-01-06 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-03-06 00:00:00.0
Scheduled Compliance Date:	2009-03-06 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

AOC LLC (Continued) **1000238960**

ENVIROSTOR:

Name:	AOC LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 923700000
Facility ID:	80001432
Status:	Active
Status Date:	08/12/2009
Site Code:	401231
Site Type:	Corrective Action
Site Type Detailed:	Corrective Action
Acres:	10
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	WM
Program Manager:	Daniel Philo
Supervisor:	Jose Diaz
Division Branch:	Cleanup Chatsworth
Assembly:	61
Senate:	31
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	33.83099
Longitude:	-117.2627
APN:	317090029
Past Use:	MANUFACTURING - CHEMICALS
Potential COC:	Diethylene glycol, monobutyl ether Diethylene glycol, monoethyl ether Ethylene glycol Ethylene glycol, monobutyl ether Phthalic anhydride Propylene glycol Propylene glycol, monoethyl ether Propylene glycol, monomethyl ether
Confirmed COC:	NONE SPECIFIED
Potential Description:	OTH, SED, SOIL, SURFW
Alias Name:	317090029
Alias Type:	APN
Alias Name:	CAD059270975
Alias Type:	EPA Identification Number
Alias Name:	110000479385
Alias Type:	EPA (FRS #)
Alias Name:	401231
Alias Type:	Project Code (Site Code)
Alias Name:	80001432
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	RCRA Facility Assessment Report
Completed Date:	10/24/1988
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* CA Process is Terminated
Completed Date:	10/24/1988
Comments:	Not reported

AOC LLC (Continued) **1000238960**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Questionnaire
Completed Date: 07/16/1992
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 02/04/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Report
Completed Date: 03/10/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 11/19/1980
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 01/11/2005
Comments: DTSC issued a letter to RP submitting a copy of the RCRA Facility Assessment report dated October 1988

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 12/16/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 09/19/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: RCRA Facility Assessment Report
Completed Date: 10/01/1988
Comments: RCRA FA was conducted by A. T. Kearney on behalf of the U.S.EPA

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Litigation Support
Completed Date: 09/15/2006
Comments: DTSC issued a letter on September 15, 2006 responding a letter request, dated April 24, 2006, to provide additional information on: 1) summary report related to the DTSC March 10, 2005 on-site evaluation; 2) copies of figures indicating the location of the new

AOC LLC (Continued) **1000238960**

areas of concerns (AOCs) identified, as referenced in Section 3 of the draft corrective action consent agreement (CACA); and 3) clarification of table 2.3 of the draft CACA

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Pre-HARP Form
Completed Date: 01/25/2005
Comments: Signed HARP is not available in the file room

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 03/07/2007
Comments: DTSC concurred with AOC's proposed schedule for submittal of the Letter Report on Current Condition at the AOC LLC Facility

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 04/30/1990
Comments: DHS issued a letter on April 30, 1990 on which acknowledged the Certification of Closure Report dated December 28, 1989, for the hazardous waste incinerator that operated at the Alpha Resins Corporation. The acknowledgment of Facility closure was not a certification that the Facility did not pose any environmental or public health threat, nor did release the owner/operator from responsibilities and liabilities associated with past hazardous waste management practices that occurred at the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/10/2015
Comments: Cost estimate completed

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Report
Completed Date: 03/30/1981
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 07/17/2020
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

AOC LLC (Continued) **1000238960**

HIST UST:

Name:	ALPHA RESINS
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92370
File Number:	0001F9FE
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001F9FE.pdf
Region:	STATE
Facility ID:	00000019398
Facility Type:	Other
Other Type:	RESIN PLANT
Contact Name:	JOHN HUGHES
Telephone:	7146575161
Owner Name:	THE ALPHA CORPORATION
Owner Address:	HIGHWAY 57 EAST
Owner City,St,Zip:	COLLIERVILLE, TN 38017
Total Tanks:	0003
Tank Num:	001
Container Num:	01
Year Installed:	Not reported
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	1/4
Leak Detection:	Stock Inventor
Tank Num:	002
Container Num:	02
Year Installed:	Not reported
Tank Capacity:	00010000
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	1/4
Leak Detection:	Visual
Tank Num:	003
Container Num:	03
Year Installed:	Not reported
Tank Capacity:	00008000
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Container Construction Thickness:	1/4
Leak Detection:	Stock Inventor

Click here for Geo Tracker PDF:

RAATS:

Entry No:	1
Facility ID:	CAD059270975
Type:	Not reported
Docket No:	RCRA-09-85-0001
Region:	09
Issue Date:	Not reported
Final Date:	10/12/1984
Status:	Complaint Issued
Additional:	Not reported

AOC LLC (Continued) **1000238960**

Action ID:	522
Action:	3008 (A)
Violation No:	Not reported
Viol No Cited:	1 3005
Total No Cited:	Not reported
Reg Type:	Federal
Prop. Penalty:	.00
Final Penalty:	.00
Total Prop. Penalty:	.00
Comments:	Not reported

Entry No:	1
Facility ID:	CAD059270975
Type:	Not reported
Docket No:	RCRA-09-85-0001
Region:	09
Issue Date:	Not reported
Final Date:	10/12/1984
Status:	Complaint Issued
Additional:	Not reported
Action ID:	522
Action:	3008 (A)
Violation No:	Not reported
Viol No Cited:	2 270.10(E)(4)
Total No Cited:	Not reported
Reg Type:	CFR
Prop. Penalty:	*
Final Penalty:	.00
Total Prop. Penalty:	.00
Comments:	Not reported

EMI:

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92370
Year:	2002
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	15
Reactive Organic Gases Tons/Yr:	10
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92370
Year:	2003
County Code:	33

AOC LLC (Continued) **1000238960**

Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	15
Reactive Organic Gases Tons/Yr:	10
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92370
Year:	2004
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	14.9067966
Reactive Organic Gases Tons/Yr:	9.82
Carbon Monoxide Emissions Tons/Yr:	1.2297
NOX - Oxides of Nitrogen Tons/Yr:	2.2815
SOX - Oxides of Sulphur Tons/Yr:	0.029756
Particulate Matter Tons/Yr:	0.26499
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.23

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92370
Year:	2005
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.889675
Reactive Organic Gases Tons/Yr:	.549064262
Carbon Monoxide Emissions Tons/Yr:	1.2121
NOX - Oxides of Nitrogen Tons/Yr:	2.184545
SOX - Oxides of Sulphur Tons/Yr:	.02143
Particulate Matter Tons/Yr:	.261165
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.23025594

Name:	AOC, LLC
Address:	19991 SEATON AVE

AOC LLC (Continued) **1000238960**

City,State,Zip:	PERRIS, CA 92370
Year:	2006
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	9.432175151723743611
Reactive Organic Gases Tons/Yr:	5.853
Carbon Monoxide Emissions Tons/Yr:	1.365
NOX - Oxides of Nitrogen Tons/Yr:	2.26
SOX - Oxides of Sulphur Tons/Yr:	.023
Particulate Matter Tons/Yr:	.294
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.2641

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92370
Year:	2007
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	9.430036548942120371
Reactive Organic Gases Tons/Yr:	5.853
Carbon Monoxide Emissions Tons/Yr:	1.365
NOX - Oxides of Nitrogen Tons/Yr:	2.26
SOX - Oxides of Sulphur Tons/Yr:	.023
Particulate Matter Tons/Yr:	.294
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.2641

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92570
Year:	2008
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2295
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	15.07811376000858083
Reactive Organic Gases Tons/Yr:	9.963154663978917988
Carbon Monoxide Emissions Tons/Yr:	.9653995
NOX - Oxides of Nitrogen Tons/Yr:	4.40242296085028655
SOX - Oxides of Sulphur Tons/Yr:	.014278975
Particulate Matter Tons/Yr:	.194995375
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.19497979

AOC LLC (Continued) **1000238960**

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92570
Year:	2009
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2295
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8.0821268014842804
Reactive Organic Gases Tons/Yr:	5.1635499999999999
Carbon Monoxide Emissions Tons/Yr:	0.68061000000000005
NOX - Oxides of Nitrogen Tons/Yr:	3.1142699999999999
SOX - Oxides of Sulphur Tons/Yr:	0.0122285
Particulate Matter Tons/Yr:	0.13782249999999999
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.13762286500000001

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92570
Year:	2010
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2295
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	5.7045807250007101
Reactive Organic Gases Tons/Yr:	3.6664599999999998
Carbon Monoxide Emissions Tons/Yr:	0.72604000000000002
NOX - Oxides of Nitrogen Tons/Yr:	1.3524
SOX - Oxides of Sulphur Tons/Yr:	0.01336795
Particulate Matter Tons/Yr:	0.15657974999999999
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.14263007150000001

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92570
Year:	2011
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2295
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	5.8255886653
Reactive Organic Gases Tons/Yr:	3.70706
Carbon Monoxide Emissions Tons/Yr:	0.86354
NOX - Oxides of Nitrogen Tons/Yr:	1.65961
SOX - Oxides of Sulphur Tons/Yr:	0.01689

AOC LLC (Continued) **1000238960**

Particulate Matter Tons/Yr:	0.18962
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.17000252

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92570
Year:	2012
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2295
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	5.7202886107
Reactive Organic Gases Tons/Yr:	3.73289
Carbon Monoxide Emissions Tons/Yr:	0.77024
NOX - Oxides of Nitrogen Tons/Yr:	1.4247
SOX - Oxides of Sulphur Tons/Yr:	0.01286
Particulate Matter Tons/Yr:	0.16742
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.14213816

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92570
Year:	2013
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	5.7592429067
Reactive Organic Gases Tons/Yr:	3.81681
Carbon Monoxide Emissions Tons/Yr:	1.98159
NOX - Oxides of Nitrogen Tons/Yr:	1.48536
SOX - Oxides of Sulphur Tons/Yr:	0.01438
Particulate Matter Tons/Yr:	0.17037
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.1417864

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92570
Year:	2014
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	6.4971263252
Reactive Organic Gases Tons/Yr:	4.63982

AOC LLC (Continued) **1000238960**

Carbon Monoxide Emissions Tons/Yr:	0.70304
NOX - Oxides of Nitrogen Tons/Yr:	0.70898
SOX - Oxides of Sulphur Tons/Yr:	0.01108
Particulate Matter Tons/Yr:	0.14849
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.12351596

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92570
Year:	2015
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	12.673498909
Reactive Organic Gases Tons/Yr:	11.77189445
Carbon Monoxide Emissions Tons/Yr:	0.900319
NOX - Oxides of Nitrogen Tons/Yr:	0.9924485
SOX - Oxides of Sulphur Tons/Yr:	0.01402181
Particulate Matter Tons/Yr:	0.18722315
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.161949201

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92570
Year:	2016
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.7742614136
Reactive Organic Gases Tons/Yr:	1.00127321
Carbon Monoxide Emissions Tons/Yr:	0.8260817
NOX - Oxides of Nitrogen Tons/Yr:	0.77
SOX - Oxides of Sulphur Tons/Yr:	0.0127233242
Particulate Matter Tons/Yr:	0.15259185
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.1294313376

Name:	AOC, LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 92570
Year:	2017
County Code:	33
Air Basin:	SC
Facility ID:	117140
Air District Name:	SC
SIC Code:	2821
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported

AOC LLC (Continued) **1000238960**

Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.8833343432
Reactive Organic Gases Tons/Yr:	1.0516311
Carbon Monoxide Emissions Tons/Yr:	0.787559
NOX - Oxides of Nitrogen Tons/Yr:	1.4439181
SOX - Oxides of Sulphur Tons/Yr:	0.012990141
Particulate Matter Tons/Yr:	0.15292615
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.129653644

HWP:

Name:	AOC LLC
Address:	19991 SEATON AVE
City,State,Zip:	PERRIS, CA 923700000
EPA Id:	CAD059270975
Cleanup Status:	CLOSED
Latitude:	33.83099
Longitude:	-117.2627
Facility Type:	Historical - Non-Operating
Facility Size:	Not reported
Team:	Not reported
Supervisor:	Not reported
Site Code:	401231, TBD
Assembly District:	61
Senate District:	31
Public Information Officer:	Not reported
Public Information Officer:	Not reported

Activities:

EPA Id:	CAD059270975
Facility Type:	Historical - Non-Operating
Unit Names:	INCIN1, TANKSTR1
Event Description:	New Operating Permit - 2ND NOTICE OF DEFICIENCY ISSUED
Actual Date:	10/23/1984

EPA Id:	CAD059270975
Facility Type:	Historical - Non-Operating
Unit Names:	INCIN1, TANKSTR1
Event Description:	New Operating Permit - APPLICATION PART A RECEIVED
Actual Date:	11/19/1980

EPA Id:	CAD059270975
Facility Type:	Historical - Non-Operating
Unit Names:	INCIN1, TANKSTR1
Event Description:	New Operating Permit - 1ST NOTICE OF DEFICIENCY ISSUED
Actual Date:	02/14/1984

EPA Id:	CAD059270975
Facility Type:	Historical - Non-Operating
Unit Names:	INCIN1, TANKSTR1
Event Description:	New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST ACKNOWLEDGED
Actual Date:	06/21/1989

EPA Id:	CAD059270975
Facility Type:	Historical - Non-Operating
Unit Names:	INCIN1, TANKSTR1
Event Description:	New Operating Permit - RESPONSE TO 1ST NOD RECEIVED
Actual Date:	03/28/1984

AOC LLC (Continued) **1000238960**

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - APPLICATION PART B RECEIVED
Actual Date: 05/02/1983

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - CALL-IN LETTER ISSUED
Actual Date: 09/30/1982

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST RECEIVED
Actual Date: 01/01/1989

Closure:

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - RECEIVE CLOSURE CERTIFICATION
Actual Date: 12/28/1989

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - CLOSURE PLAN APPROVED
Actual Date: 06/21/1989

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - PUBLIC COMMENT (BEGIN)
Actual Date: 02/06/1989

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - CLOSURE PLAN RECEIVED
Actual Date: 02/19/1985

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - PUBLIC COMMENT (END)
Actual Date: 03/08/1989

EPA Id: CAD059270975
Facility Type: Historical - Non-Operating
Unit Names: INCIN1, TANKSTR1
Event Description: Closure Final - ISSUE CLOSURE VERIFICATION
Actual Date: 04/30/1990

Alias:

AOC LLC (Continued) **1000238960**

EPA Id:	CAD059270975
Facility Type:	Historical - Non-Operating
Alias Type:	FRS
Alias:	110000479385
EPA Id:	CAD059270975
Facility Type:	Historical - Non-Operating
Alias Type:	Project Code (Site Code)
Alias:	401231
EPA Id:	CAD059270975
Facility Type:	Historical - Non-Operating
Alias Type:	Project Code (Site Code)
Alias:	TBD

NPDES:

Name:	AOC LLC
Address:	19991 SEATON AVENUE
City,State,Zip:	PERRIS, CA 92570
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 33I001426
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:	03/27/1992
Operator Name:	AOC LLC
Operator Address:	19991 Seaton Avenue
Operator City:	Perris
Operator State:	California
Operator Zip:	92570

NPDES as of 03/2018:

NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	8
Regulatory Measure ID:	210684
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 33I001426

AOC LLC (Continued) **1000238960**

Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/27/1992
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	AOC LLC
Discharge Address:	19991 Seaton Avenue
Discharge City:	Perris
Discharge State:	California
Discharge Zip:	92570
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
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

AOC LLC (Continued) **1000238960**

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:	210684
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 33I001426
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:	05/09/2008
Processed Date:	03/27/1992
Status:	Active
Status Date:	03/27/1992
Place Size:	10
Place Size Unit:	Acres
Contact:	Juan Montalvo
Contact Title:	Environmental Health Safety Leader
Contact Phone:	951-943-9708
Contact Phone Ext:	Not reported
Contact Email:	jmontalvo@aoc-resins.com
Operator Name:	AOC LLC
Operator Address:	19991 Seaton Avenue
Operator City:	Perris
Operator State:	California
Operator Zip:	92570
Operator Contact:	JUAN MONTALVO
Operator Contact Title:	EHS Leader
Operator Contact Phone:	951-943-9708
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	jmontalvo@aoc-resins.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

AOC LLC (Continued) **1000238960**

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:	Perris
Certifier:	JUAN MONTALVO
Certifier Title:	EHS LEADER
Certification Date:	05-MAR-15
Primary Sic:	2821-Plastics Material and Synthetic Resins, and Nonvulcanizable Elastomers
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Name:	AOC LLC
Address:	19991 SEATON AVENUE
City,State,Zip:	PERRIS, CA 92570
Facility Status:	Active
NPDES Number:	CAS000001
Region:	8
Agency Number:	0
Regulatory Measure ID:	210684
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	8 33I001426
Regulatory Measure Type:	Enrollee
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/27/1992
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	19991 Seaton Avenue
Discharge Name:	AOC LLC
Discharge City:	Perris
Discharge State:	California
Discharge Zip:	92570
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported

AOC LLC (Continued) **1000238960**

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:	210684
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	8 33I001426
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/27/1992
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	AOC LLC
Discharge Address:	19991 Seaton Avenue
Discharge City:	Perris
Discharge State:	California
Discharge Zip:	92570
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

AOC LLC (Continued) **1000238960**

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:	210684
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	8 33I001426
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:	05/09/2008
Processed Date:	03/27/1992
Status:	Active
Status Date:	03/27/1992
Place Size:	10
Place Size Unit:	Acres
Contact:	Juan Montalvo
Contact Title:	Environmental Health Safety Leader
Contact Phone:	951-943-9708
Contact Phone Ext:	Not reported
Contact Email:	jmontalvo@aoc-resins.com
Operator Name:	AOC LLC
Operator Address:	19991 Seaton Avenue
Operator City:	Perris
Operator State:	California

AOC LLC (Continued) **1000238960**

Operator Zip:	92570
Operator Contact:	JUAN MONTALVO
Operator Contact Title:	EHS Leader
Operator Contact Phone:	951-943-9708
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	jmontalvo@aoc-resins.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:	Perris
Certifier:	JUAN MONTALVO
Certifier Title:	EHS LEADER
Certification Date:	05-MAR-15
Primary Sic:	2821-Plastics Material and Synthetic Resins, and Nonvulcanizable Elastomers
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CIWQS:

Name:	AOC LLC
Address:	19991 SEATON AVENUE
City,State,Zip:	PERRIS, CA 92570
Agency:	AOC LLC
Agency Address:	19991 Seaton Avenue, Perris, CA 92570
Place/Project Type:	Industrial - Plastics Material and Synthetic Resins, and Nonvulcanizable Elastomers
SIC/NAICS:	2821
Region:	8
Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water industrial

AOC LLC (Continued) **1000238960**

Order Number:	2014-0057-DWQ
WDID:	8 33I001426
NPDES Number:	CAS000001
Adoption Date:	01/01/1900
Effective Date:	03/27/1992
Termination Date:	01/01/1900
Expiration/Review Date:	01/01/1900
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:	33.83092
Longitude:	-117.26161

CERS:

Name:	AOC LLC
Address:	19991 SEATON AVENUE
City,State,Zip:	PERRIS, CA 92570
Site ID:	526382
CERS ID:	205955
CERS Description:	Industrial Facility Storm Water

Violations:

Site ID:	526382
Site Name:	AOC LLC
Violation Date:	07-02-1999
Citation:	2014-0057-DWQ - Industrial General Permit
Violation Description:	SW - Deficient Report
Violation Notes:	Non-submittal of Annual Report. Due 7//1/1999
Violation Division:	Water Boards
Violation Program:	INDSTW
Violation Source:	SMARTS

Affiliation:

Affiliation Type Desc:	Owner/Operator
Entity Name:	AOC LLC
Entity Title:	Operator
Affiliation Address:	19991 Seaton Avenue
Affiliation City:	Perris
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92570
Affiliation Phone:	Not reported

Name:	AOC LLC
Address:	19991 SEATON AVENUE
City,State,Zip:	PERRIS, CA 92570-8724
Site ID:	451612
CERS ID:	110000479385
CERS Description:	US EPA Air Emission Inventory System (EIS)

Affiliation:

Affiliation Type Desc:	Environmental Contact
Entity Name:	JUAN F MONTALVO

AOC LLC (Continued) **1000238960**

Entity Title:	ENVIRONMENTAL HEALTH AND SAFETY LEADER
Affiliation Address:	19991 SEATON AVENUE
Affiliation City:	PERRIS
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Public Contact
Entity Name:	JAMES EARL
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

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5 NNE 1/2-1 0.575 mi. 3036 ft.

VAL VERDE CONTINUATION HIGH SCHOOL
NEVADA AVENUE/MORGAN STREET
PERRIS, CA 92571

ENVIROSTOR SCH **S105628757 N/A**

Relative: Lower

Actual: 1499 ft.

ENVIROSTOR:

Name:	VAL VERDE CONTINUATION HIGH SCHOOL
Address:	NEVADA AVENUE/MORGAN STREET
City,State,Zip:	PERRIS, CA 92571-3103
Facility ID:	33010050
Status:	No Further Action
Status Date:	05/23/2002
Site Code:	404250
Site Type:	School Investigation
Site Type Detailed:	School
Acres:	18
NPL:	NO
Regulatory Agencies:	DTSC
Lead Agency:	DTSC
Program Manager:	Not reported
Supervisor:	Javier Hinojosa
Division Branch:	Southern California Schools & Brownfields Outreach
Assembly:	61
Senate:	31
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	33.8217
Longitude:	-117.2039
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Arsenic Aldrin Chlordane DDD DDE DDT Dieldrin Endosulfan Endrin HCH (alpha HCH (beta HCH (gamma) Lindane HCH-technical Heptachlor Heptachlor epoxide Mirex Toxaphene
Confirmed COC:	30001-NO 30004-NO 30006-NO 30007-NO 30008-NO 30010-NO 30309-NO 30313-NO 30314-NO 30315-NO 30316-NO 30207-NO 30400-NO 30261-NO 30043-NO 30308-NO 30023-NO

VAL VERDE CONTINUATION HIGH SCHOOL (Continued) **S105628757**

Potential Description: SOIL
Alias Name: MORGAN STREET HIGH SCHOOL SITE
Alias Type: Alternate Name
Alias Name: VAL VERDE CONTINUATION HIGH SCHOOL
Alias Type: Alternate Name
Alias Name: VAL VERDE UNIFIED SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: VAL VERDE USD-CONTINUATION SCHOOL
Alias Type: Alternate Name
Alias Name: VAL VERDE USD-PRPSD VAL VERDE CONT. HS
Alias Type: Alternate Name
Alias Name: 404242
Alias Type: Project Code (Site Code)
Alias Name: 404250
Alias Type: Project Code (Site Code)
Alias Name: 33010050
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: 05/23/2002
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Workplan
Completed Date: 12/05/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 07/13/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 09/18/2001
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: VAL VERDE CONTINUATION HIGH SCHOOL
Address: NEVADA AVENUE/MORGAN STREET

VAL VERDE CONTINUATION HIGH SCHOOL (Continued) **S105628757**

City,State,Zip:	PERRIS, CA 92571-3103
Facility ID:	33010050
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	18
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC
Lead Agency:	DTSC
Lead Agency Description:	* DTSC
Project Manager:	Not reported
Supervisor:	Javier Hinojosa
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	404250
Assembly:	61
Senate:	31
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	05/23/2002
Restricted Use:	NO
Funding:	School District
Latitude:	33.8217
Longitude:	-117.2039
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Arsenic, Aldrin, Chlordane, DDD, DDE, DDT, Dieldrin, Endosulfan, Endrin, HCH (alpha, HCH (beta, HCH (gamma) Lindane, HCH-technical, Heptachlor, Heptachlor epoxide, Mirex, Toxaphene
Confirmed COC:	30001-NO, 30004-NO, 30006-NO, 30007-NO, 30008-NO, 30010-NO, 30309-NO, 30313-NO, 30314-NO, 30315-NO, 30316-NO, 30207-NO, 30400-NO, 30261-NO, 30043-NO, 30308-NO, 30023-NO
Potential Description:	SOIL
Alias Name:	MORGAN STREET HIGH SCHOOL SITE
Alias Type:	Alternate Name
Alias Name:	VAL VERDE CONTINUATION HIGH SCHOOL
Alias Type:	Alternate Name
Alias Name:	VAL VERDE UNIFIED SCHOOL DISTRICT
Alias Type:	Alternate Name
Alias Name:	VAL VERDE USD-CONTINUATION SCHOOL
Alias Type:	Alternate Name
Alias Name:	VAL VERDE USD-PRPSD VAL VERDE CONT. HS
Alias Type:	Alternate Name
Alias Name:	404242
Alias Type:	Project Code (Site Code)
Alias Name:	404250
Alias Type:	Project Code (Site Code)
Alias Name:	33010050
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:	05/23/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

VAL VERDE CONTINUATION HIGH SCHOOL (Continued) **S105628757**

Completed Document Type: * Workplan
Completed Date: 12/05/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 07/13/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 09/18/2001
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: 4 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
PERRIS	1026208409	4413 PATTERSON H&M	4413 PATTERSON AVE	92571	ECHO
PERRIS	S121668185	RIDER ST	S RIDER ST & W REDLANDS AVE	92571	CIWQS
PERRIS	S123537965	LEO'S AUTO REPAIR	140 W WALNUT ST #B9	92571	CERS HAZ WASTE
RIVERSIDE COUNTY	S107537442		@ RAMONA EXPRESSWAY & RIDER ST		CDL

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: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 03/04/2021
Next Scheduled EDR Contact: 04/12/2021
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 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

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: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 03/04/2021
Next Scheduled EDR Contact: 04/12/2021
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: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 03/04/2021
Next Scheduled EDR Contact: 04/12/2021
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: 12/23/2020
Next Scheduled EDR Contact: 04/12/2021
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: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 35

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/04/2021
Next Scheduled EDR Contact: 04/26/2021
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: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 35

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/04/2021
Next Scheduled EDR Contact: 04/26/2021
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: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
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: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
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: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
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: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
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: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
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: 11/11/2020
Date Data Arrived at EDR: 11/17/2020
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 84

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/08/2021
Next Scheduled EDR Contact: 05/24/2021
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: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/18/2020
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/23/2021
Next Scheduled EDR Contact: 06/06/2021
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

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: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/18/2020
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/23/2021
Next Scheduled EDR Contact: 06/06/2021
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: 12/14/2020
Date Data Arrived at EDR: 12/15/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 7

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/15/2020
Next Scheduled EDR Contact: 04/05/2021
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: 10/26/2020
Date Data Arrived at EDR: 10/26/2020
Date Made Active in Reports: 01/13/2021
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/26/2021
Next Scheduled EDR Contact: 05/10/2021
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: 10/26/2020
Date Data Arrived at EDR: 10/26/2020
Date Made Active in Reports: 01/13/2021
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/26/2021
Next Scheduled EDR Contact: 05/10/2021
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: 11/09/2020
Date Data Arrived at EDR: 11/10/2020
Date Made Active in Reports: 01/14/2021
Number of Days to Update: 65

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/09/2021
Next Scheduled EDR Contact: 05/24/2021
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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: 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: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
Data Release Frequency: Quarterly

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 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 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 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 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 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 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 R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 10/02/2020
Date Data Arrived at EDR: 12/18/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 84

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 09/30/2020
Date Data Arrived at EDR: 12/22/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 80

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 10/09/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/12/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 10/07/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 07/21/2020
Date Data Arrived at EDR: 09/03/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 83

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 12/02/2020
Date Data Arrived at EDR: 12/08/2020
Date Made Active in Reports: 02/23/2021
Number of Days to Update: 77

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 03/12/2021
Next Scheduled EDR Contact: 06/28/2021
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: 10/02/2020
Date Data Arrived at EDR: 12/18/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 84

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 11/12/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 12/15/2020
Next Scheduled EDR Contact: 05/03/2021
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: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 09/30/2020
Date Data Arrived at EDR: 12/22/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 80

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 10/07/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 10/09/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 05/03/2021
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: 10/26/2020
Date Data Arrived at EDR: 10/26/2020
Date Made Active in Reports: 01/13/2021
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/26/2021
Next Scheduled EDR Contact: 05/10/2021
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: 12/15/2020
Next Scheduled EDR Contact: 04/05/2021
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: 12/17/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 03/09/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
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: 12/11/2020
Date Data Arrived at EDR: 12/11/2020
Date Made Active in Reports: 03/02/2021
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/16/2021
Next Scheduled EDR Contact: 06/28/2021
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: 01/25/2021
Next Scheduled EDR Contact: 05/10/2021
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/07/2020
Date Data Arrived at EDR: 12/08/2020
Date Made Active in Reports: 02/22/2021
Number of Days to Update: 76

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/23/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/08/2021
Next Scheduled EDR Contact: 05/24/2021
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: 01/25/2021
Next Scheduled EDR Contact: 05/10/2021
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: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
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: 01/29/2021
Next Scheduled EDR Contact: 05/10/2021
Data Release Frequency: Varies

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: 12/07/2020
Date Data Arrived at EDR: 12/09/2020
Date Made Active in Reports: 03/02/2021
Number of Days to Update: 83

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/22/2021
Next Scheduled EDR Contact: 06/06/2021
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: 10/26/2020
Date Data Arrived at EDR: 10/26/2020
Date Made Active in Reports: 01/13/2021
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/26/2021
Next Scheduled EDR Contact: 05/10/2021
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: 06/30/2019
Date Data Arrived at EDR: 05/28/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 01/19/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Varies

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

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: 10/19/2020
Date Data Arrived at EDR: 10/19/2020
Date Made Active in Reports: 01/07/2021
Number of Days to Update: 80

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 01/20/2021
Next Scheduled EDR Contact: 05/03/2021
Data Release Frequency: Quarterly

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: 12/07/2020
Date Data Arrived at EDR: 12/09/2020
Date Made Active in Reports: 03/02/2021
Number of Days to Update: 83

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/22/2021
Next Scheduled EDR Contact: 06/06/2021
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: 12/07/2020
Date Data Arrived at EDR: 12/08/2020
Date Made Active in Reports: 02/22/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 02/24/2021
Next Scheduled EDR Contact: 06/21/2021
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

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: 11/05/2020
Date Data Arrived at EDR: 11/06/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 81

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
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: 10/19/2020
Date Data Arrived at EDR: 10/19/2020
Date Made Active in Reports: 01/07/2021
Number of Days to Update: 80

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/20/2021
Next Scheduled EDR Contact: 05/03/2021
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: 11/24/2020
Date Data Arrived at EDR: 11/30/2020
Date Made Active in Reports: 02/10/2021
Number of Days to Update: 72

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/26/2021
Next Scheduled EDR Contact: 06/14/2021
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: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 03/04/2021
Next Scheduled EDR Contact: 04/12/2021
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: 11/30/2020
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/12/2021
Number of Days to Update: 73

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/03/2021
Next Scheduled EDR Contact: 06/14/2021
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: 12/16/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 85

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
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: 09/30/2020
Date Data Arrived at EDR: 10/19/2020
Date Made Active in Reports: 01/07/2021
Number of Days to Update: 80

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/20/2021
Next Scheduled EDR Contact: 05/03/2021
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: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
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: 09/29/2020
Date Data Arrived at EDR: 11/17/2020
Date Made Active in Reports: 01/25/2021
Number of Days to Update: 69

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/17/2021
Next Scheduled EDR Contact: 05/31/2021
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: 01/15/2021
Next Scheduled EDR Contact: 04/26/2021
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: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/07/2021
Next Scheduled EDR Contact: 04/19/2021
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: 02/09/2021
Next Scheduled EDR Contact: 05/24/2021
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: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
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: 02/02/2021
Next Scheduled EDR Contact: 05/17/2021
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: 02/05/2021
Next Scheduled EDR Contact: 05/17/2021
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: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/18/2020
Next Scheduled EDR Contact: 03/29/2021
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: 12/31/2018
Date Data Arrived at EDR: 08/14/2020
Date Made Active in Reports: 11/04/2020
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/02/2021
Next Scheduled EDR Contact: 05/31/2021
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: 10/19/2020
Date Data Arrived at EDR: 10/19/2020
Date Made Active in Reports: 01/04/2021
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/21/2021
Next Scheduled EDR Contact: 05/03/2021
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: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 35

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/04/2021
Next Scheduled EDR Contact: 06/14/2021
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: 11/02/2020
Date Data Arrived at EDR: 11/12/2020
Date Made Active in Reports: 01/25/2021
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
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: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 03/05/2021
Number of Days to Update: 50

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 03/11/2021
Next Scheduled EDR Contact: 05/17/2021
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: 10/09/2019
Date Data Arrived at EDR: 10/11/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 70

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/08/2021
Next Scheduled EDR Contact: 04/19/2021
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: 12/30/2020
Next Scheduled EDR Contact: 04/19/2021
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: 08/05/2020
Date Data Arrived at EDR: 08/10/2020
Date Made Active in Reports: 10/08/2020
Number of Days to Update: 59

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
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: 12/31/2019
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 70

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 03/05/2021
Next Scheduled EDR Contact: 06/14/2021
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: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/02/2021
Next Scheduled EDR Contact: 06/14/2021
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: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/05/2021
Next Scheduled EDR Contact: 05/17/2021
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: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/08/2021
Next Scheduled EDR Contact: 04/12/2021
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: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/27/2021
Next Scheduled EDR Contact: 05/10/2021
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: 09/30/2020
Date Data Arrived at EDR: 10/08/2020
Date Made Active in Reports: 01/04/2021
Number of Days to Update: 88

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
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: 12/31/2017
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 11/20/2020
Number of Days to Update: 151

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 12/23/2020
Next Scheduled EDR Contact: 04/05/2021
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: 01/08/2021
Next Scheduled EDR Contact: 04/19/2021
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: 02/02/2021
Next Scheduled EDR Contact: 05/17/2021
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: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/18/2021
Next Scheduled EDR Contact: 05/31/2021
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 03/04/2021
Next Scheduled EDR Contact: 04/12/2021
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

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 11/24/2020
Date Data Arrived at EDR: 11/30/2020
Date Made Active in Reports: 01/25/2021
Number of Days to Update: 56

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 03/01/2021
Next Scheduled EDR Contact: 06/14/2021
Data Release Frequency: Quarterly

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: 11/03/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 01/25/2021
Number of Days to Update: 63

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/24/2021
Next Scheduled EDR Contact: 06/06/2021
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: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 02/26/2021
Next Scheduled EDR Contact: 06/06/2021
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: 02/26/2021
Next Scheduled EDR Contact: 06/06/2021
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: 12/11/2020
Date Data Arrived at EDR: 12/11/2020
Date Made Active in Reports: 03/02/2021
Number of Days to Update: 81

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/08/2021
Next Scheduled EDR Contact: 06/21/2021
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: 11/04/2020
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 01/25/2021
Number of Days to Update: 55

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/03/2021
Next Scheduled EDR Contact: 06/14/2021
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/17/2020
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 02/26/2021
Next Scheduled EDR Contact: 06/06/2021
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 10/03/2020
Date Data Arrived at EDR: 10/06/2020
Date Made Active in Reports: 01/04/2021
Number of Days to Update: 90

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 01/08/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/15/2021
Next Scheduled EDR Contact: 04/26/2021
Data Release Frequency: Varies

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: 11/13/2020
Date Data Arrived at EDR: 11/13/2020
Date Made Active in Reports: 01/25/2021
Number of Days to Update: 73

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/17/2021
Next Scheduled EDR Contact: 05/31/2021
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: 12/17/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 03/09/2021
Number of Days to Update: 82

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

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: 02/12/2021
Next Scheduled EDR Contact: 05/24/2021
Data Release Frequency: Varies

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: 11/17/2020
Date Data Arrived at EDR: 11/18/2020
Date Made Active in Reports: 02/04/2021
Number of Days to Update: 78

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 02/22/2021
Next Scheduled EDR Contact: 06/06/2021
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: 11/23/2020
Date Data Arrived at EDR: 11/25/2020
Date Made Active in Reports: 02/10/2021
Number of Days to Update: 77

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/26/2021
Next Scheduled EDR Contact: 06/14/2021
Data Release Frequency: Annually

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: 11/23/2020
Date Data Arrived at EDR: 11/24/2020
Date Made Active in Reports: 02/10/2021
Number of Days to Update: 78

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 02/26/2021
Next Scheduled EDR Contact: 06/14/2021
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: 12/31/2018
Date Data Arrived at EDR: 06/16/2020
Date Made Active in Reports: 08/28/2020
Number of Days to Update: 73

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/18/2020
Next Scheduled EDR Contact: 03/29/2021
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: 10/16/2020
Date Data Arrived at EDR: 10/19/2020
Date Made Active in Reports: 01/07/2021
Number of Days to Update: 80

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/20/2021
Next Scheduled EDR Contact: 05/03/2021
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 10/13/2020
Date Data Arrived at EDR: 10/14/2020
Date Made Active in Reports: 01/04/2021
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/22/2021
Next Scheduled EDR Contact: 05/03/2021
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: 11/12/2020
Date Data Arrived at EDR: 11/13/2020
Date Made Active in Reports: 01/29/2021
Number of Days to Update: 77

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/08/2021
Next Scheduled EDR Contact: 05/24/2021
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: 12/31/2019
Date Data Arrived at EDR: 04/15/2020
Date Made Active in Reports: 07/02/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/05/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Annually

ICE: ICE
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/13/2020
Date Data Arrived at EDR: 11/13/2020
Date Made Active in Reports: 02/01/2021
Number of Days to Update: 80

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/17/2021
Next Scheduled EDR Contact: 05/31/2021
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: 11/13/2020
Date Data Arrived at EDR: 11/13/2020
Date Made Active in Reports: 02/01/2021
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/17/2021
Next Scheduled EDR Contact: 05/31/2021
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: 10/05/2020
Date Data Arrived at EDR: 10/06/2020
Date Made Active in Reports: 12/23/2020
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/05/2021
Next Scheduled EDR Contact: 04/19/2021
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: 12/07/2020
Date Data Arrived at EDR: 12/08/2020
Date Made Active in Reports: 02/22/2021
Number of Days to Update: 76

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 10/30/2020
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/12/2021
Number of Days to Update: 73

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/03/2021
Next Scheduled EDR Contact: 06/14/2021
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/09/2020
Date Data Arrived at EDR: 11/10/2020
Date Made Active in Reports: 01/27/2021
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/09/2021
Next Scheduled EDR Contact: 05/24/2021
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: 11/30/2020
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/12/2021
Number of Days to Update: 73

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/03/2021
Next Scheduled EDR Contact: 06/14/2021
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/07/2020
Date Data Arrived at EDR: 12/08/2020
Date Made Active in Reports: 02/22/2021
Number of Days to Update: 76

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 12/07/2020
Date Data Arrived at EDR: 12/09/2020
Date Made Active in Reports: 12/10/2020
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/12/2021
Next Scheduled EDR Contact: 06/28/2021
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: 02/01/2021
Date Data Arrived at EDR: 02/19/2021
Date Made Active in Reports: 02/22/2021
Number of Days to Update: 3

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 11/19/2019
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/09/2020
Number of Days to Update: 62

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/08/2021
Next Scheduled EDR Contact: 04/19/2021
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: 02/16/2021
Next Scheduled EDR Contact: 05/31/2021
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: 12/15/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)

Military privatized sites

Date of Government Version: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)

Projects sites

Date of Government Version: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 12/07/2020
Date Data Arrived at EDR: 12/08/2020
Date Made Active in Reports: 02/22/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 11/30/2020
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/12/2021
Number of Days to Update: 73

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 03/03/2021
Next Scheduled EDR Contact: 06/14/2021
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: 10/19/2020
Date Data Arrived at EDR: 10/19/2020
Date Made Active in Reports: 01/07/2021
Number of Days to Update: 80

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/20/2021
Next Scheduled EDR Contact: 05/03/2021
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 12/04/2020
Date Data Arrived at EDR: 12/04/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Semi-Annually

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 10/13/2020
Date Data Arrived at EDR: 10/14/2020
Date Made Active in Reports: 11/03/2020
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 01/19/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Varies

PCS INACTIVE: Listing of Inactive PCS Permits

An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Semi-Annually

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 12/30/2020
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System

Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 02/26/2021
Next Scheduled EDR Contact: 09/10/2018
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: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 10/06/2020
Date Made Active in Reports: 12/23/2020
Number of Days to Update: 78

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 10/19/2020
Date Data Arrived at EDR: 10/22/2020
Date Made Active in Reports: 01/12/2021
Number of Days to Update: 82

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
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: 12/30/2020
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 12/15/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 12/24/2020
Number of Days to Update: 8

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/15/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/26/2021
Next Scheduled EDR Contact: 05/17/2021
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: 10/19/2020
Date Data Arrived at EDR: 10/22/2020
Date Made Active in Reports: 01/13/2021
Number of Days to Update: 83

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/25/2021
Next Scheduled EDR Contact: 05/10/2021
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 08/13/2020
Date Made Active in Reports: 10/22/2020
Number of Days to Update: 70

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/25/2021
Next Scheduled EDR Contact: 05/10/2021
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 10/22/2020
Date Data Arrived at EDR: 11/03/2020
Date Made Active in Reports: 01/20/2021
Number of Days to Update: 78

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 02/08/2021
Next Scheduled EDR Contact: 05/10/2021
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: 10/02/2020
Date Data Arrived at EDR: 10/06/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 77

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 01/15/2021
Next Scheduled EDR Contact: 04/12/2021
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: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/18/2020
Date Data Arrived at EDR: 11/19/2020
Date Made Active in Reports: 02/04/2021
Number of Days to Update: 77

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/16/2021
Next Scheduled EDR Contact: 05/31/2021
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 10/14/2020
Date Data Arrived at EDR: 10/15/2020
Date Made Active in Reports: 01/05/2021
Number of Days to Update: 82

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
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: 02/16/2021
Next Scheduled EDR Contact: 05/31/2021
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 10/29/2020
Date Data Arrived at EDR: 10/30/2020
Date Made Active in Reports: 01/15/2021
Number of Days to Update: 77

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 01/19/2021
Date Data Arrived at EDR: 01/21/2021
Date Made Active in Reports: 01/28/2021
Number of Days to Update: 7

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
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: 05/11/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/16/2021
Next Scheduled EDR Contact: 05/31/2021
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 02/10/2021
Date Data Arrived at EDR: 02/12/2021
Date Made Active in Reports: 03/11/2021
Number of Days to Update: 27

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/11/2021
Next Scheduled EDR Contact: 04/26/2021
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 03/12/2021
Next Scheduled EDR Contact: 05/03/2021
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: 03/12/2021
Next Scheduled EDR Contact: 06/28/2021
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 10/19/2020
Date Data Arrived at EDR: 10/20/2020
Date Made Active in Reports: 01/12/2021
Number of Days to Update: 84

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/09/2020
Date Data Arrived at EDR: 10/09/2020
Date Made Active in Reports: 12/29/2020
Number of Days to Update: 81

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/12/2021
Next Scheduled EDR Contact: 04/26/2021
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: 12/31/2019
Date Data Arrived at EDR: 08/17/2020
Date Made Active in Reports: 11/05/2020
Number of Days to Update: 80

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/11/2021
Next Scheduled EDR Contact: 04/26/2021
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: 12/18/2020
Next Scheduled EDR Contact: 04/05/2021
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: 01/15/2021
Next Scheduled EDR Contact: 04/26/2021
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: 12/18/2020
Next Scheduled EDR Contact: 04/05/2021
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: 12/18/2020
Next Scheduled EDR Contact: 04/05/2021
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: 07/20/2020
Date Data Arrived at EDR: 10/09/2020
Date Made Active in Reports: 12/29/2020
Number of Days to Update: 81

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/12/2021
Next Scheduled EDR Contact: 04/26/2021
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: 10/07/2020
Next Scheduled EDR Contact: 01/25/2021
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: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
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: 09/11/2020
Date Data Arrived at EDR: 10/07/2020
Date Made Active in Reports: 12/23/2020
Number of Days to Update: 77

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
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: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/16/2021
Next Scheduled EDR Contact: 05/31/2021
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: 12/21/2020
Next Scheduled EDR Contact: 04/12/2021
Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/21/2020
Date Data Arrived at EDR: 12/21/2020
Date Made Active in Reports: 03/10/2021
Number of Days to Update: 79

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/22/2021
Next Scheduled EDR Contact: 06/06/2021
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 02/04/2021
Date Data Arrived at EDR: 02/09/2021
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 9

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 01/29/2021
Next Scheduled EDR Contact: 05/31/2021
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 11/16/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/22/2021
Next Scheduled EDR Contact: 06/06/3021
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 07/13/2020
Date Data Arrived at EDR: 07/15/2020
Date Made Active in Reports: 07/31/2020
Number of Days to Update: 16

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 12/21/2020
Next Scheduled EDR Contact: 04/12/2021
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: 02/22/2021
Next Scheduled EDR Contact: 06/06/2021
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: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/22/2021
Next Scheduled EDR Contact: 06/06/2021
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 10/26/2020
Date Data Arrived at EDR: 10/28/2020
Date Made Active in Reports: 01/15/2021
Number of Days to Update: 79

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/25/2021
Next Scheduled EDR Contact: 05/10/2021
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 09/01/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 09/01/2020
Date Data Arrived at EDR: 11/06/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 81

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2021
Next Scheduled EDR Contact: 05/17/2021
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 09/01/2020
Date Data Arrived at EDR: 11/03/2020
Date Made Active in Reports: 01/21/2021
Number of Days to Update: 79

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/02/2021
Next Scheduled EDR Contact: 05/17/2021
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: 11/24/2020
Date Data Arrived at EDR: 11/24/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 1

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 02/26/2021
Next Scheduled EDR Contact: 06/14/2021
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: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
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: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 03/10/2021
Number of Days to Update: 55

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/15/2021
Next Scheduled EDR Contact: 06/28/2021
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 03/10/2021
Number of Days to Update: 55

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/15/2021
Next Scheduled EDR Contact: 06/28/2021
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: 02/18/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 76

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/30/2020
Next Scheduled EDR Contact: 04/12/2021
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: 02/24/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/17/2020
Number of Days to Update: 78

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/30/2020
Next Scheduled EDR Contact: 04/12/2021
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 10/30/2020
Date Made Active in Reports: 01/15/2021
Number of Days to Update: 77

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
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: 11/16/2020
Date Data Arrived at EDR: 11/18/2020
Date Made Active in Reports: 02/04/2021
Number of Days to Update: 78

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
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: 11/30/2020
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/16/2021
Number of Days to Update: 77

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/03/2021
Next Scheduled EDR Contact: 03/15/2021
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
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: 07/14/2020
Date Data Arrived at EDR: 07/16/2020
Date Made Active in Reports: 09/29/2020
Number of Days to Update: 75

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/03/2021
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: 02/26/2021
Next Scheduled EDR Contact: 06/14/2021
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 11/05/2020
Date Data Arrived at EDR: 11/06/2020
Date Made Active in Reports: 01/27/2021
Number of Days to Update: 82

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
Data Release Frequency: Varies

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: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
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: 11/05/2020
Date Data Arrived at EDR: 11/06/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 81

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
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: 03/12/2021
Next Scheduled EDR Contact: 06/28/2021
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/12/2020
Date Data Arrived at EDR: 11/13/2020
Date Made Active in Reports: 02/01/2021
Number of Days to Update: 80

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/16/2021
Next Scheduled EDR Contact: 05/31/2021
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: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/12/2021
Next Scheduled EDR Contact: 06/21/2021
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: 03/08/2021
Next Scheduled EDR Contact: 06/21/2021
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: 02/16/2021
Next Scheduled EDR Contact: 05/31/2021
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 11/20/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/05/2021
Number of Days to Update: 74

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/16/2021
Next Scheduled EDR Contact: 05/31/2021
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: 02/22/2021
Next Scheduled EDR Contact: 06/06/2021
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/26/2021
Next Scheduled EDR Contact: 05/16/2021
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: 02/16/2021
Next Scheduled EDR Contact: 05/31/2021
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: 02/16/2021
Next Scheduled EDR Contact: 05/31/2021
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: 02/26/2021
Next Scheduled EDR Contact: 06/14/2021
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 12/03/2020
Date Made Active in Reports: 02/18/2021
Number of Days to Update: 77

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/12/2021
Next Scheduled EDR Contact: 06/14/2021
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 12/15/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 12/23/2020
Number of Days to Update: 7

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/15/2020
Next Scheduled EDR Contact: 04/05/2021
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: 09/18/2020
Date Data Arrived at EDR: 09/22/2020
Date Made Active in Reports: 12/14/2020
Number of Days to Update: 83

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/15/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 10/06/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 77

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 01/11/2021
Next Scheduled EDR Contact: 04/26/2021
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 11/23/2020
Date Data Arrived at EDR: 11/24/2020
Date Made Active in Reports: 02/10/2021
Number of Days to Update: 78

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 02/26/2021
Next Scheduled EDR Contact: 06/14/2021
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 08/11/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/26/2020
Number of Days to Update: 75

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 10/14/2020
Date Data Arrived at EDR: 10/15/2020
Date Made Active in Reports: 01/05/2021
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 10/30/2020
Date Data Arrived at EDR: 11/03/2020
Date Made Active in Reports: 01/20/2021
Number of Days to Update: 78

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 02/01/2021
Next Scheduled EDR Contact: 05/17/2021
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: 01/19/2021
Next Scheduled EDR Contact: 05/03/2021
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: 09/28/2020
Date Data Arrived at EDR: 10/22/2020
Date Made Active in Reports: 01/12/2021
Number of Days to Update: 82

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/19/2021
Next Scheduled EDR Contact: 05/02/2021
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: 12/21/2020
Next Scheduled EDR Contact: 04/12/2021
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: 02/08/2021
Next Scheduled EDR Contact: 05/24/2021
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: 09/28/2020
Date Data Arrived at EDR: 10/22/2020
Date Made Active in Reports: 01/12/2021
Number of Days to Update: 82

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/20/2021
Next Scheduled EDR Contact: 05/03/2021
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: 12/01/2020
Date Data Arrived at EDR: 12/08/2020
Date Made Active in Reports: 02/22/2021
Number of Days to Update: 76

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/09/2021
Next Scheduled EDR Contact: 06/21/2021
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: 12/21/2020
Date Data Arrived at EDR: 12/23/2020
Date Made Active in Reports: 01/04/2021
Number of Days to Update: 12

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/20/2020
Next Scheduled EDR Contact: 04/11/2021
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 01/26/2021
Date Data Arrived at EDR: 01/28/2021
Date Made Active in Reports: 02/03/2021
Number of Days to Update: 6

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 02/23/2021
Next Scheduled EDR Contact: 05/10/2021
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: 08/10/2020
Date Data Arrived at EDR: 10/20/2020
Date Made Active in Reports: 11/02/2020
Number of Days to Update: 13

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/12/2021
Next Scheduled EDR Contact: 05/24/2021
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: 01/08/2021
Next Scheduled EDR Contact: 04/19/2021
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: 04/29/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/29/2021
Next Scheduled EDR Contact: 05/10/2021
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: 01/11/2021
Next Scheduled EDR Contact: 04/26/2021
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 02/24/2021
Number of Days to Update: 13

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/09/2021
Next Scheduled EDR Contact: 05/31/2021
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: 03/08/2021
Next Scheduled EDR Contact: 06/21/2021
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
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 Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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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.

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

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

RIDER AND PATTERSON
RIDER AND PATTERSON
PERRIS, CA 92570

TARGET PROPERTY COORDINATES

Latitude (North):	33.828675 - 33˚ 49' 43.23''
Longitude (West):	117.255041 - 117˚ 15' 18.15''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	476399.8
UTM Y (Meters):	3742995.5
Elevation:	1561 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5641324 STEELE PEAK, CA
Version Date:	2012
East Map:	5641330 PERRIS, 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).

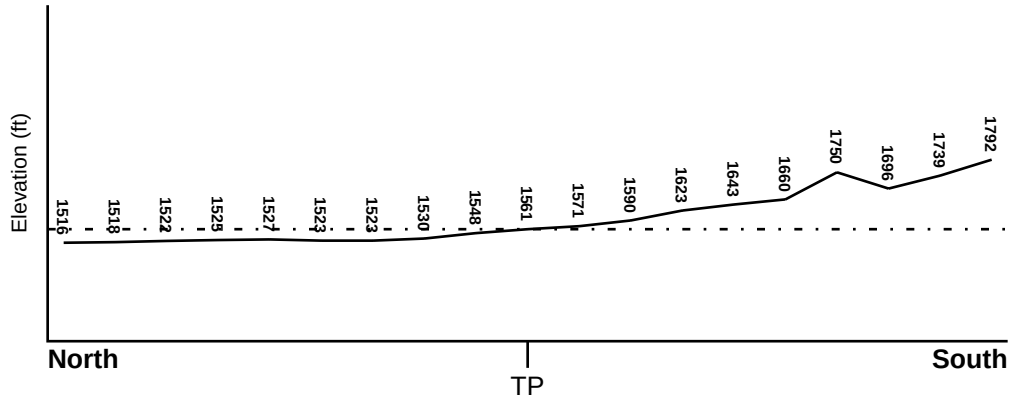
TOPOGRAPHIC INFORMATION

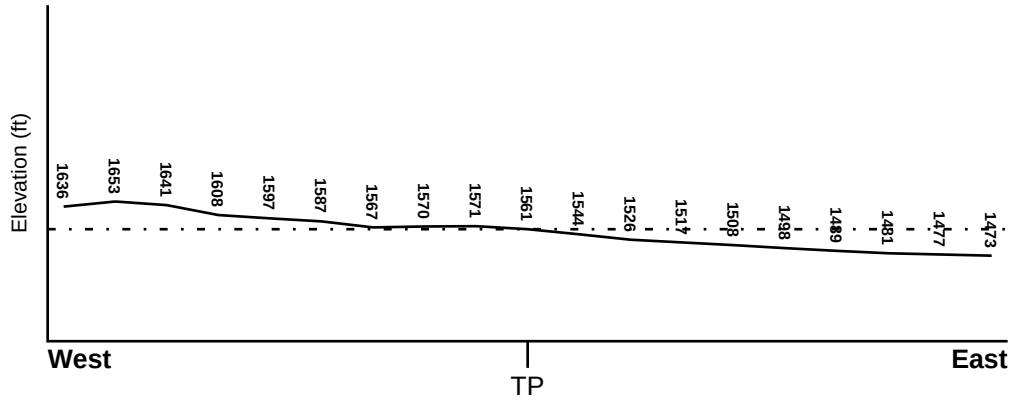
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 1561 ft.

0 1/2 1 Miles

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
06065C1410G	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06065C1430H	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
A1	1/2 - 1 Mile SSE	Not Reported
1G	1/2 - 1 Mile SSE	Not Reported

For additional site information, refer to Physical Setting Source Map Findings.

* ©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

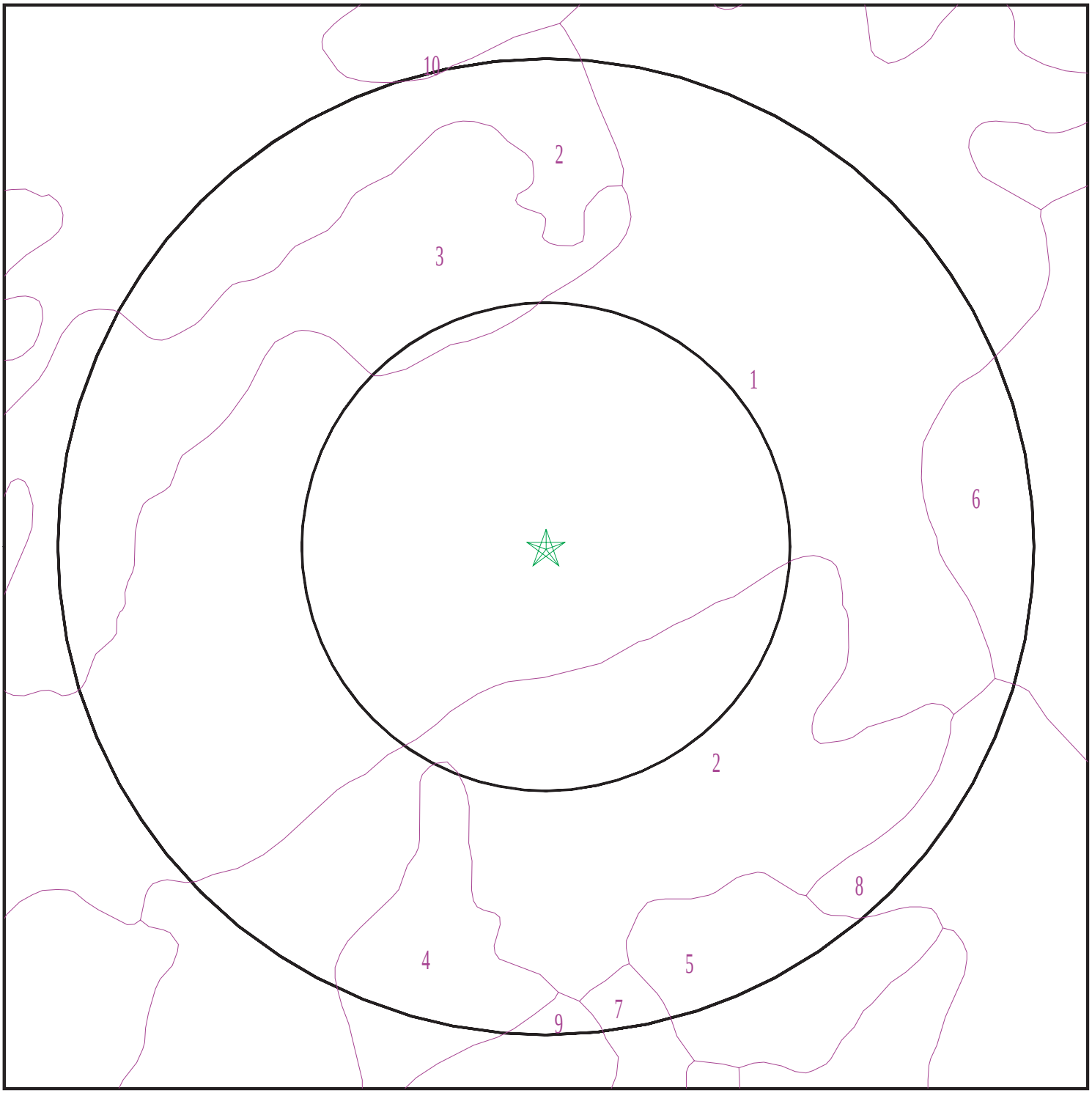
Era:	Mesozoic
System:	Cretaceous
Series:	Cretaceous granitic rocks
Code:	Kg *(decoded above as Era, System & Series)*

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 - 6407949.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Rider and Patterson	CLIENT:	Hazard Management Consulting
ADDRESS:	Rider and Patterson Perris CA 92570	CONTACT:	Troy Taylor
		INQUIRY #:	6407949.2s
LAT/LONG:	33.828675 / 117.255041	DATE:	March 17, 2021 3:12 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: 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	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

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	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: 2

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

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

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
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

Soil Map ID: 3

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

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	7 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	7 inches	16 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

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	16 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: 4

Soil Component Name: FALLBROOK

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

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	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	18 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
3	18 inches	22 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 5

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

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
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: 6

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

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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: 7

Soil Component Name: FALLBROOK

Soil Surface Texture: sandy loam

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: 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	14 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
2	14 inches	24 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
3	24 inches	27 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 8

Soil Component Name: FALLBROOK

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

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	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
2	7 inches	18 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
3	18 inches	22 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 9

Soil Component Name: GORGONIO

Soil Surface Texture: stratified gravelly loamy sand to gravelly loamy fine sand

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 excessively 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	14 inches	59 inches	stratified gravelly loamy sand to gravelly loamy fine sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 5.6
2	0 inches	14 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 5.6

Soil Map ID: 10

Soil Component Name: HANFORD

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: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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	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
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
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

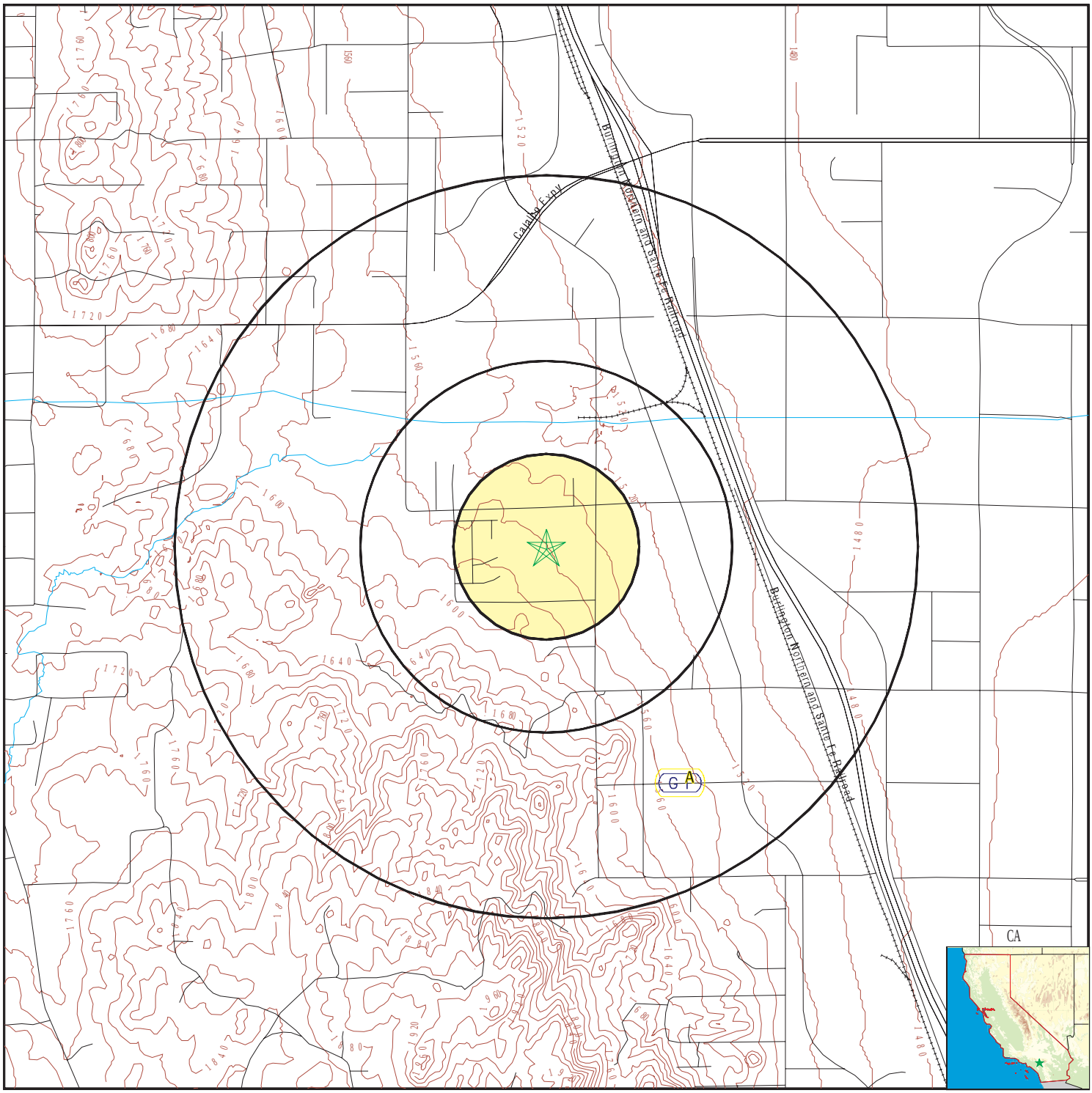
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 6407949.2s



0 1/4 1/2 1 Miles

- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- 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

N

SITE NAME:	Rider and Patterson	CLIENT:	Hazard Management Consulting
ADDRESS:	Rider and Patterson Perris CA 92570	CONTACT:	Troy Taylor
		INQUIRY #:	6407949.2s
LAT/LONG:	33.828675 / 117.255041	DATE:	March 17, 2021 3:12 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
A1 **SSE** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083302019T Not Reported Not Reported Not Reported 100' 05/15/1992	**AQUIFLOW**	**66414**
A2 **SSE** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083302019T Not Reported Not Reported Not Reported <100 05/15/1992	**AQUIFLOW**	**37864**
1G **SSE** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083302019T Not Reported Not Reported Not Reported 100' 05/15/1992	**AQUIFLOW**	**66414**
2G **SSE** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	083302019T Not Reported Not Reported Not Reported <100 05/15/1992	**AQUIFLOW**	**37864**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92570	2	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.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

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.

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
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

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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.

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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Rider and Patterson

Rider and Patterson
Perris, CA 92570

Inquiry Number: 6407949.5
March 23, 2021

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
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

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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Data by infoUSA®

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2017	☑	☐	EDR Digital Archive
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☐	EDR Digital Archive
1985	☑	☐	Haines Criss-Cross Directory
1980	☑	☐	Haines Criss-Cross Directory
1976	☑	☐	Haines Criss-Cross Directory
1971	☐	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

Rider and Patterson
Perris, CA 92570

Year	CD Image	Source	
PATTERSON AVE			
2017	pg A1	EDR Digital Archive	
2014	pg A5	EDR Digital Archive	
2010	pg A9	EDR Digital Archive	
2005	pg A13	EDR Digital Archive	
2000	pg A17	EDR Digital Archive	
1995	pg A20	EDR Digital Archive	
1992	pg A23	EDR Digital Archive	
1985	pg A25	Haines Criss-Cross Directory	
1980	pg A27	Haines Criss-Cross Directory	
1976	pg A30	Haines Criss-Cross Directory	
1976	pg A31	Haines Criss-Cross Directory	
1971	-	Haines Criss-Cross Directory	Street not listed in Source
RIDER ST			
2017	pg A2	EDR Digital Archive	
2014	pg A6	EDR Digital Archive	
2010	pg A10	EDR Digital Archive	
2005	pg A14	EDR Digital Archive	
2000	pg A18	EDR Digital Archive	
1995	pg A21	EDR Digital Archive	
1992	pg A24	EDR Digital Archive	
1985	pg A26	Haines Criss-Cross Directory	
1980	pg A28	Haines Criss-Cross Directory	
1980	pg A29	Haines Criss-Cross Directory	
1976	pg A32	Haines Criss-Cross Directory	
1971	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PATTERSON AVE 2017

19543	TOTH, STEVEN P
19765	METROPOLITAN WATER
20030	MOORE, THOMAS S
20050	ARRIZON, EDUARDO
20111	OCAMPO, SABAS
20117	DOWNTAIN, JOHN
20170	UTURN FOR CHRIST
20240	ESTRADA, ANELIA E
20281	MAUSLING, DAVID L
20335	SADLER, JAMES C
20441	RAZO, PABLO S
20610	ROMERO, CHARLES D
24021	MEDRANO, ERIKA
24031	CERVANTES, ROSAMARIA
24041	MARTINEZ, MARIA M

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2017

17675	BENNER, KENNETH H
20020	GONZALEZ, MARIA T
20040	SANCHEZ, LIBRADO L
20050	ALVAREZ, ESEQUIEL D
20060	FREEMAN, BARBARA
20070	TORRES, JUAN C
20120	VILLA, EDUARDO C
20142	CAMPOS, ANA L
20164	TAVARES, ELIZABETH
20180	SOTELO, ANDRES
20202	NUNEZ, ANTONIO L
20226	LOPEZ, PEDRO
20261	RODRIGUEZ, DAVID A
20264	MOSLEY, ALICIA
20278	RAMIREZ, JOSE L
20285	MEYERS, LOUIS O
20296	AAKER, MELISSA
20314	DELGADO, ROSA V
20333	GARCIA, FRANCISCO
20356	YEPES, RICARDO O
20376	CHAVEZ, GERARDO
20395	ACOSTA, GABBY
	BOGGS, ROBERT C
	LOPEZ, FRANK J
	RICHARDS, MARTIN J
	SWIFT, KRISTA
20416	MENDEZ, RAUL M
20434	VASQUEZ, MARIA
20462	MARTINEZ, JOSE L
20525	ESPUDERO, JUAN
20545	JONES, DEBORAH M
20549	COX, DANIEL A
20550	SALITRE, JOE
20562	SMITH, AMANDA
20571	WRIGHT, CAMILLA
20575	MOSLEY, LANISHA
20576	DAVIS, MYRTICE L
20587	HAYWOOD, DANIELLE L
	SATISFIED AIR LLC
20602	FLORES, JOSE L
20627	HOWSE, ALAN
20638	BONFIL, VLADIMIR
20653	RAMIREZ, NEIDA
20678	AGUILERA, GUILLE
20724	ZARATE, HECTOR S
20742	COWAN, TERESA
20760	SOTO, IRMA I
20770	QUINTERO-SR, FRANCISCO
20801	MARIN, JOSE
20810	GARCIA, BLANCA

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2017 (Cont'd)

20830	MAGALLANES, JOSE M
20851	LEON, C
20878	MURILLO, JOHN
20883	DURAN, GARDUNO D
20887	SANDOVAL, BENITO
20891	TODD, DELMER A
20908	FRANCO, HERARDO
20909	FLETES, EDITH
20910	MARTINEZ, JOSE S
20940	JOHNSON, WILLIAM
20950	SOTELO, SIMONA
20970	LIM, G
21010	LOPEZ, PEDRO
21060	MARQUEZ, EDUARDO R
21091	ALMA RAMIREZ VALLEY COMMUNITY SERVIC
	MEAD VALLEY COMMUNITY DENTAL CLINIC
21100	ROCHIN, BENJAMIN
21145	SANCHEZ, LEOPOLDO
21162	VASQUEZ, GERARDO
21225	FREDRICK, LEON
21240	MCCANTS, ANNIE H
21251	SARABIA, REFUGIO
21275	DELGADO, MARIA M
21331	BATES, JANET E
21341	MARTINEZ, EMILIANO
21401	MIRANDA, JOSE S
21411	GUIJARRO, RODOLFO B
21431	CHAVARIN, RAFAEL S
21451	CASAS, CARLOS
21521	MANUEL, TAPIA G
21550	BANKS, VICTOR
21601	WINBUSH, MICHAEL
21630	NAUSLAR, LYDIA D
21631	BARBEE, SHARLYN
21643	OROZCO, MARIA
21650	MARIN, ANTONIO M
21651	MOZQUEDA, JOSE
21667	THORTON, TINA
21720	GONZALEZ, ANTONIO A
21740	DIAZ, ELIZABETH
21760	MOORE, LOUIS J
21785	FLORES, LAZARO F
21890	GONZALEZ, OMAR
21907	LOPEZ, BENEDICTA
21924	DELATORRE, SANDRA L
21951	SKIPPER, DENNIS M
21976	LOZA, FRANCISCO J
21983	THOMPSON, CAROLYN R
23100	PAPP, ROBIN E
23108	BANDA, MAURILIO C

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2017 (Cont'd)

23116	JALLEGOS, MERCEDES
23120	WARMUSKERKEN, MICHAEL J
23124	PATINO, HECTOR J
23126	MOORE, REGINALD E
23128	CYR, FRANK P
23130	MORROW, ROBERT L
23132	REYNOLDS, ANTHONY C
23138	GONZALEZ, CARLOS
23140	CEJA, GARCIA E
23144	DEACEVEDO, MARISELA B
23148	CASTILLO, ANGELICA
23340	STAR MILLING CO
23615	ESCHRICH, CHARLES H
23711	JM EAGLE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PATTERSON AVE 2014

19542	OCCUPANT UNKNOWN,
19543	TOTH, STEVEN P
20030	MOORE, STEWART
20050	ARRIZON, EDUARDO
	SERRATO, JANET
20111	MCCUMISKEY, WILLIAM E
20117	RAMIREZ, DAWN
20170	UTURN FOR CHRIST
20210	OCCUPANT UNKNOWN,
20240	MAGANA, RAMIRO
20281	MAUSLING, DAVID L
20335	RIGOLI, JOHN E
20401	HERRERA, JUAN V
20411	VELASQUEZ, IGNACIO
20441	RAZO, VICTOR
20610	ROMERO, CHARLES D
24021	MEJIA, BETTY L
24031	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2014

17675	BENNER, KENNETH H
19961	GURTNER, AARON
20040	OCCUPANT UNKNOWN,
20050	ALVAREZ, ESEQUIEL D
20060	FREEMAN, BARBARA
20070	TORRES, JUAN C
20130	VILLA, YOLANDA M
20142	CAMPOS, ANA L
20164	MENDEZ, ANGEL B
20180	SOTELO, ANDRES
20202	NUNEZ, ANTONIO L
20226	ANGUINO, MARIA
20261	RODRIGUEZ, DAVID A
20264	OCCUPANT UNKNOWN,
20278	RAMIREZ, JOSE L
20285	MEYERS, LOUIS O
20296	MOTA, ELSA
20314	DELGADO, ROSA V
20333	GARCIA, FRANCISCO
20356	YEPES, RICARDO O
20376	CHAVEZ, GERARDO
20395	ACOSTA, GABBY
	BEITZELL, MYKE
	BOGGS, ROBERT C
	OCCUPANT UNKNOWN,
	RICHARDS, MARTIN J
20396	AVELAR, MARIA R
20416	MURILLO, RAUL M
20434	BEECHER, KENNETH
20462	MARTINEZ, JOSE L
20525	LEON, IRMA
20545	JONES, DEBORAH M
20549	COX, DANIEL
20550	SALITRE, JOSE L
20562	SULLIVAN, LAWRENCE R
20571	HAYDEN, SAMQUE
20575	MOSLEY, LANISHA
20576	DAVIS, SHUNN
20587	OCCUPANT UNKNOWN,
20601	OCCUPANT UNKNOWN,
20602	FLORES, JOSE L
20627	HOWSE, ALAN
20638	VALDEZ, MARGARITA
20652	QUINTERO, CARLOS M
20653	OCCUPANT UNKNOWN,
20678	ROBLES, IRVING G
20724	ZARATE, HECTOR S
20742	PHILLIPS, TERRY
20760	MALDONADO, VANESSA
20770	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2014 (Cont'd)

20790	GONZALEZ, HORACIO
20801	MARIN, JOSE
20810	OCCUPANT UNKNOWN,
20830	MAGALLANES, JOSE W
20851	FIERRO, JESUS G
	JOHNSON, SANDRA
20878	MURILLO, ALICIA A
20883	HATFIELD, JIM
20887	OLIVARES, JOSE
20891	TODD, DELMER
20908	FRANCO, HERARDO
20909	OCCUPANT UNKNOWN,
20910	TORRES, FELIPA
20940	ANDRUS, CLAUDIA L
20950	SOTELO, SIMONA
20970	LIMA, GEORGE S
21010	LOPEZ, PEDRO
21060	OCCUPANT UNKNOWN,
21090	OCCUPANT UNKNOWN,
21091	MEAD VALLEY COMMUNITY DENTAL CLINIC
	MID VALLEY COMMUNITY SERVICE CLINIC
21100	NORIEGA, SABINA
21145	SANCHEZ, LEOPOLDO
21155	DO, KENNY K
21162	VASQUEZ, GERARDO
21210	IBARRA, EMILIO
21220	NAVA, RUBEN
21240	MCCANTS, ANNIE H
21251	OCCUPANT UNKNOWN,
21275	GONZALES, SHELLY
21331	CLARK, ARZEDA
21341	MARTINEZ, EMILIANO
21350	COLUMBIA ELEMENTARY SCHOOL
21385	SANCHEZ, JOSE D
21401	HARRISON, COREY E
21411	GUIJARRO, RODOLFO B
21431	CHAVARIN, RAFAEL S
21451	CONTLA, RICHARD E
21521	GONZALEZ, ALICIA T
21550	BANKS, VICTOR
21601	WINBUSH, MICHAEL
21630	NAUSLAR, HAL G
21631	FIGUEROA, ROSENDO
21643	OROZCO, MARIA
21650	TARDY, GARY E
21651	MOZQUEDA, JOSE
21667	THORTON, TINA
21720	GONZALEZ, ANTONIO A
21740	DIAZ, ELIZABETH
21785	FLORES, LAZARO F

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2014 (Cont'd)

21890	RUIZ, DEMETRIO
21891	OCCUPANT UNKNOWN,
21907	LOPEZ, BENEDICTA
21924	POLARD, LINDA J
21951	SKIPPER, DENNIS M
21967	GONZALEZ, RAYMUNDO N
21976	LOZA, FRANCISCO J
21983	THOMPSON, CAROLYN R
23040	NICKENS, MELODY A
23100	PAPP, ROBIN E
23102	CORNEJO, JOSE B
23106	OCCUPANT UNKNOWN,
23108	BANDA, MAURILIO C
23116	FRANCO, FROYLAN
23120	WARMUSKERKEN, MICHAEL J
23124	PATINO, HECTOR J
23126	MOORE, REGINALD E
23128	CYR, FRANK P
23130	MORROW, ROBERT L
23132	REYNOLDS, TIM K
23138	OCCUPANT UNKNOWN,
23140	CEJA, GARCIA
23144	DEACEVEDO, MARISELA B
23148	DELREAL, LEANDRO
23150	GONZALEZ, GLORIA
23340	MCANALLY EGG ENTERPRISES INC
23615	ESCHRICH, CHARLES H
	EXPRESS FENCE & SUPPLY CO
23711	JM EAGLE
23842	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PATTERSON AVE 2010

19542	OCCUPANT UNKNOWN,
19543	TOTH, STEVEN P
19765	OCCUPANT UNKNOWN,
19851	HERNANDEZ, BENJAMIN G
19971	BROOKER, CHARLES A
20030	MOORE, THOMAS H
20050	MONTALVO, TELESFORO
	OSORIO, ROSA E
	SERRATO, JANETT
20111	MCCUMISKEY, JEFFREY R
20117	VALDEZ, ERIKA C
20170	HEAVENLY KETTLE CORN
	UTURN FOR CHRIST THRIFT STORE
20210	OROZCO, MAURA F
20281	GUEVARA, JOSE R
20335	SADLER, JAMES C
20401	HERRERA, JUAN V
20411	VELASQUEZ, IGNACIO
20441	RAZO, PABLO
20550	OCCUPANT UNKNOWN,
20610	ROMERO, CHARLES D
24005	CASTRO, RAFAEL E
24021	BAEZA, MARIA L
24031	OCCUPANT UNKNOWN,
24041	URQUIZU, KAREN

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2010

17675	BENNER, KENNETH H
20020	OCCUPANT UNKNOWN,
20040	OCCUPANT UNKNOWN,
20050	HIDALGO, ROBERT J
20060	FREEMAN, BARBARA
20070	OCCUPANT UNKNOWN,
20142	ZAVALA, PATRICIA
20155	BANKS, VICTOR
20164	MENDEZ, ANGEL G
20180	OCCUPANT UNKNOWN,
20202	LOPEZ, MARTIN
20226	SILVAR, ABARU
20261	MARTINEZ, HILDA G
20264	MUNOZ, DAVID A
20278	OCCUPANT UNKNOWN,
20285	MEYERS, LOUIS O
20296	MOTA, ELSA
20314	DELGADO, OSCAR T
20333	GARCIA, FRANCISCO
20376	CHAVEZ, CANDELARIO O
20395	GRAMMATICO, CYNTHIA M
	LOPEZ, FRANK J
	OCCUPANT UNKNOWN,
	RICHARDS, TIMBER R
20396	AVELAR, MARIA R
20416	DURAN, JOAQUIN
20434	GIBB, CHERYL K
20462	MARTINEZ, JOSE L
20525	GARCIA, PATRICIA
20545	AGUIRRE, CARMEN
20549	COX, DEBRA T
20550	WHITNEY, DAKOTA L
20562	JESSEE, BILL D
20571	HAYDEN, SAMQUE
20575	OCCUPANT UNKNOWN,
20576	OCCUPANT UNKNOWN,
20587	OCCUPANT UNKNOWN,
20601	OCCUPANT UNKNOWN,
20602	SANCHEZ, CARLA
20624	OCCUPANT UNKNOWN,
20638	BERNAL, PEDRO
20652	QUINTERO, CARLOS M
20653	BRAVO, ELVA
	JONES, WILLIE J
20678	YOUNG, ROBBIE G
20724	ZARATE, HECTOR S
20742	SANTOS, SOLEDAD D
20751	OCCUPANT UNKNOWN,
20760	SOTO, IRMA
20770	HERNANDEZ, CIRO

RIDER ST 2010 (Cont'd)

20790	OCCUPANT UNKNOWN,
20801	BENITEZ, RAFAELA
20810	LIRA, LEO L
20830	MAGALLANES, HOSBALDO
20851	ARMSTRONG, MARY J
	GARCIA, JESUS
	JOHNSON, GORDON D
20878	REYNOSO, CATARINO
20887	GAULT, RUPERT
20891	TODD, DELMER
20908	FRANCO, HERARDO
20909	SILVAR, YESENIA
20910	ZEPEDA, MARIELA
20940	ANDRUS, CLAUDIA L
20950	AVERY, LAUREN
20970	LIMA, GEORGE S
21090	PAGE, ACHILLES W
21091	MEAD VALLEY COMMUNITY CTR
	SOVEREIGN GRACE CMNTY CHURCH
21100	NORIEGA, GUADALUPE N
21145	SANCHEZ, ARACELI
21155	OCCUPANT UNKNOWN,
21162	CARR, RUBY L
21220	NAVA, RUBEN
21225	OCCUPANT UNKNOWN,
21240	REAGAN, JAMES W
21251	OCCUPANT UNKNOWN,
21275	GUSTIN, TERRY D
21331	OCCUPANT UNKNOWN,
21341	MARTINEZ, EMILIANO
21350	COLUMBIA ELEMENTARY SCHOOL
21385	SANCHEZ, JOSE D
21401	HARRISON, KELLY L
21411	MARTINEZ, SILVIA Y
21431	OCCUPANT UNKNOWN,
21451	KONIKOW, JESSE
21521	OCCUPANT UNKNOWN,
21550	LOTT, LAVONNE A
21630	NAUSLAR, HAL G
21631	BARBEE, WILBUR E
21643	OCCUPANT UNKNOWN,
21650	FARRAR MASONRY
	FARRAR, CHRIS L
21651	OCCUPANT UNKNOWN,
21667	MEDINA, ALEXANDER
21720	AVELAR, ANTONIO
21740	OCCUPANT UNKNOWN,
21760	PEREZ, ANTONIO
21785	OCCUPANT UNKNOWN,
21870	MERCADO, PABLO

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2010 (Cont'd)

21891	OCCUPANT UNKNOWN,
21907	GUTIERREZ, FELIX
21924	OWEN, BUTCH
21951	OCCUPANT UNKNOWN,
21967	GONZALEZ, RAYMUNDO N
21976	LOZA, FRANCISCO J
21983	THOMPSON, CAROLYN R
23102	CORNETT, JAMES
23106	ORTIZ, CLAUDIA
23108	KIM, JUM B
23116	FRANCO, FROYLAN
23120	WARMUSKERKEN, MICHAEL J
23124	PATINO, HECTOR J
23126	MOORE, REGINALD E
23128	CYR, FRANK P
23130	MORROW, ROBERT L
23132	REYNOLDS, TIM K
23138	SANTILLAN, FREDY
23140	SANTILLAN, ISELA
23144	ROMO, ALMA
23148	DELREAL, LEANDRO
23150	GONZALEZ, ROSA M
23711	PW EAGLE INC
23840	MC ANALLY ENTERPRISES LLC
23842	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PATTERSON AVE 2005

19542	OCCUPANT UNKNOWN,
19543	TOTH, HELEN I
19755	OCCUPANT UNKNOWN,
19851	HERNANDEZ, BENJAMIN G
19971	BROOKER, CHARLES A
20030	MOORE, THOMAS H
20050	GOMEZ, FELIPE
	SOUTH BAY MASTER BUILDERS
20111	OCCUPANT UNKNOWN,
20117	PEREZ, CEASAR A
20170	OLSON, ERIC D
20210	OCCUPANT UNKNOWN,
20240	BENITEZ, J
20281	GUEVARA, JOSE R
20335	MASON, ALAN P
20401	HERRERA, JUAN M
20441	VELASQUEZ, IGNACIO
20550	PAYNE, ROBERT
20610	ROMERO, CHARLES D
24021	SOTO, ROBERTO G
24041	OCCUPANT UNKNOWN,
26365	BUNCH, DONNA L
26499	GUNN, JUSTIN R
26508	THOMSON, WILLIAM I
26675	PLACENCIAM, REBECA
26686	HOWE, KIRK P
26705	VANHEEL, MATHIJS S
26735	GREENE, JOSEPH A
26750	MCDOWELL, PAMELA A
26765	BAKER, CHARLES L
26780	MESSKE, EDITH M
26815	MUNOZ, REFUGIO M
26830	AMEND, EDWARD C
26840	PRICE, JAMES L
26851	BACCUS, PHILLIP E
26880	SWEENEY, RICHARD
26885	ONA, HECTOR M
26889	OCCUPANT UNKNOWN,
26890	JAUREGUI, REFUGIO G
26935	HOUGH, DANIEL A
26946	ELLER, WILLIAM G
26950	FRANKS, LOU D
27180	OCCUPANT UNKNOWN,
27190	OCCUPANT UNKNOWN,
27280	BAKER, WILLIAM E

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2005

17675	BENNER, KENNETH H
20020	AAMCO TRANSMISSIONS
	OCCUPANT UNKNOWN,
20060	OCCUPANT UNKNOWN,
20070	ROSALES-VALDEZ, JUAN M
20142	VEISAGA, DIMITRI
20164	RIVAS, OLGA
20202	OCCUPANT UNKNOWN,
20226	DELGADO, ELIZABETH
20261	GONZALEZ, YOLANDA
20264	MUNOZ, DAVID A
20278	OCCUPANT UNKNOWN,
20285	MEYERS, LOUIS O
20296	MOTA, ELSA
20333	GARCIA, FRANCISCO
20376	CHAVEZ, CANDELARIO O
20395	BOGGS, ROBERT C
	RICHARDS, TIMBER R
20396	OCCUPANT UNKNOWN,
20416	SALGADO, MAYRA
20434	GIBB, CHERYL K
20462	MARTINEZ, JOSE L
20525	ALONZO, MARTHA
20545	WILSON, FLORENCE
20549	COX, DEBRA T
20550	OCCUPANT UNKNOWN,
20562	JAMES, LADALE
20571	OCCUPANT UNKNOWN,
20575	JOHNSON, ROSIE V
20576	OCCUPANT UNKNOWN,
20601	DECK, SHERREE
20602	CLINTON, JOHN D
20638	GREEN, JERRY L
20652	MACIAS, PILAR
20678	YOUNG, ROBBIE
20724	ZARATE, GUSTAVO
20742	OCCUPANT UNKNOWN,
20770	HERNANDEZ, CIRO
20790	KING, RICK M
20801	BENITEZ, JOSE
20830	VILLALOBOS, HUMBERTO
20851	JOHNSON, GORDON D
	MALICK, JEAN M
	RAMOS, LAURA
	WILSON, CANDACE
20878	MURILLO, TONY
20883	ALLEY, BILL J
20891	TODD, DELMER
20908	DIAZ, ESTHER
20909	DURAN, L

Target Street	Cross Street	Source
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RIDER ST 2005 (Cont'd)

20910	MARTINEZ, JOSE S
20940	GREEN, ALPHONSO P
20950	KENNON, ERDIS
20970	LIMA, GEORGE
21010	ADAMS, PHILLIP C
21090	PAGE, ACHILLES W
21091	MEAD VALLEY COMMUNITY CENTER
	MOMMY & ME MEDICAL GROUP INC
21100	NORIEGA, GUADALUPE
21145	SANCHEZ, LEOPOLDO
21155	DO, KENNY K
21162	CARR, LOUIS S
	P & J PRINTING
21220	WILLARD, GLORIA J
21225	OCCUPANT UNKNOWN,
21240	FRANK, GENEVA
21275	AMERICAN DREAMS BUILDERS
	GUSTIN, TERRY D
21331	ALOSI, SANTI
21341	MARTINEZ, EMILIANO
21350	PCM 3
21385	GARCIA, ANTHONY G
21401	WAYNE, DAVID E
21411	MORRIS, CATHERINE R
21451	OCCUPANT UNKNOWN,
21521	DIEGO, DOLORES
21601	LARRY, DIANE
21630	NAUSLAR, HAL G
21631	BARBEE, WILBUR E
21643	WILLIAMS, RONALD J
21650	FARRAR MASONRY
	OCCUPANT UNKNOWN,
21700	CORONA, RAMIRO P
21760	MOORE, LOUIS J
21785	HUTCHISON, VERNON C
21870	FELIX, BETTY
21891	HOOPER, ROOSEVELT R
21907	LOPEZ, VICTOR M
21924	OWEN, BUTCH
21951	SKIPPER, DENNIS M
21976	TAPIA, SALVADOR V
21983	THOMPSON, CAROLYN R
23100	TIBOR PAPP PAINTING
23102	TOBIAS, CONTRERAS S
23106	ORTIZ, CLAUDIA
23108	KIM, JUM
23116	FRANCO, FROYLAN
23120	WARMUSKERKEN, MICHAEL J
23124	HUERTA, ENRIQUE
23126	MOORE, REGINALD E

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2005 (Cont'd)

23128	CYR, FRANK P
23130	MORROW, ROBERT L
23132	REYNOLDS, RACHEL
23138	SANTILLAN, FREDY
23140	CEJA, ELVA C
23144	CAMACHO, CARMEN
23148	DELREAL, LEANDRO
23150	GONZALEZ, ROSA M
23482	RODRIGUEZ, PRIMITIVO R
23615	WILLIAMS, JOHN P
23711	PACIFIC WESTERN PIPE INC
	PW EAGLE INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PATTERSON AVE 2000

19542	OCCUPANT UNKNOWN,
19971	BROOKER, CHARLES A
20030	MOORE, THOMAS H
20111	MCCUMISKEY, SHELLEY A
20170	SPARKS, G
20210	OCCUPANT UNKNOWN,
20240	OCCUPANT UNKNOWN,
20281	GUEVARA, JOSE
20335	NAUGLE, VESNA
26365	WELLS, BARBARA
26499	GUNN, KATHRYN A
26675	DELGADO, H
	PLACENCIA, SANTOS
	URUZQUIETA, JUAN R
26686	OCCUPANT UNKNOWN,
26705	VANHEEL, MATHIJS
26715	GREENE, JOSEPH A
26735	SHISHIDO, CINDY J
26750	MCDOWELL, PAMELA A
26780	OCCUPANT UNKNOWN,
26815	MUNOZ, REFUGIO
26830	AMEND, EDWARD C
26840	PRICE, JAMES
	SOLON, WANDA
26851	OCCUPANT UNKNOWN,
26880	YOUNGBLOOD, CHARLES
26885	MOORE, DOREAN E
26889	OCCUPANT UNKNOWN,
26890	JAUREGUI, REFUGIO
26935	OCCUPANT UNKNOWN,
26946	BUNCH, DONNA L
26950	FRANKS, LOU
27111	OCCUPANT UNKNOWN,
27190	OCCUPANT UNKNOWN,
27280	BAKER, WILLIAM E

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 2000

20020	TILLINGHAST, CHERYL
20050	OCCUPANT UNKNOWN,
20060	DAVIS, EDWARD A
20164	OCCUPANT UNKNOWN,
20261	ACOSTA, ANTHONY D
20285	OCCUPANT UNKNOWN,
20296	OCCUPANT UNKNOWN,
20314	OCCUPANT UNKNOWN,
20333	OCCUPANT UNKNOWN,
20356	SIMS, WILLIAM A
20376	CHAVEZ, CANDELA
20396	SMITH, HESTER
20416	MORENO, MARIA
20434	BEECHER, GEORGE K
20462	MARTINEZ, JOSE L
20545	OCCUPANT UNKNOWN,
20550	OCCUPANT UNKNOWN,
20562	JESSEE, CONNIE
20571	OCCUPANT UNKNOWN,
20576	OCCUPANT UNKNOWN,
20587	BROWNS GARDENING
	HOWSE, SYLVIA
20601	DECK, SHERREE
20602	CLINTON, BOB
20624	MCDONALD, MARY C
20638	PAYTON, GLORIA
20652	FERNANDEZ, JUAN A
20653	SHEPPARD, PEARL
20678	YOUNG, ROBBIE
20770	SHAMBLIN, JOHN
20801	DAWSON, WILLIAM
20810	HARO, L
20830	OCCUPANT UNKNOWN,
20850	STANTON, RONALD
20851	JOHNSON, GORDON
20878	MURILLO, TONY
20887	OCCUPANT UNKNOWN,
20891	OCCUPANT UNKNOWN,
20908	HORN, R W
20909	OCCUPANT UNKNOWN,
20940	ANDRUS, LOUIE
20950	SMITH, BEVERLY
20970	LIMA, GEORGE
21010	SMARTT, CALVIN
21060	X RAY TOWING SERVICE
21090	PAGE, SALLIE L
21091	MEAD VALLEY COMMUNITY CENTER
21145	DUNCANS BEAUTY SHOP
	MAPLE, BUCKNER
21155	DO, HUONG

RIDER ST 2000 (Cont'd)

21162	CARR, LOUIS S
21210	DUNCAN, MARY L
21220	ALLEN, CHARLES
21225	OCCUPANT UNKNOWN,
21240	OCCUPANT UNKNOWN,
21251	AKER, L E
21275	GUSTIN, TERRY
21331	CONNOR, DRENDA
21341	SUNDS, RANDI
21385	DUENAS, JOHN V
21401	WAYNE, DAVID E
21411	OCCUPANT UNKNOWN,
21431	OCCUPANT UNKNOWN,
21521	WILSON, LAVENA C
21601	FRAZIER, JESSE
21630	DUENAS, SARAH
21631	BARBEE, LORI
21643	OCCUPANT UNKNOWN,
21650	FARRAR MASONRY
	FARRAR, CHRIS
21651	OCCUPANT UNKNOWN,
21667	ALLEN, BUELAH
21700	BROWDER, DORIS
21785	HUTCHISON, VERNON C
21870	FELIX, BETTY
21891	HOOPER, R
21907	STINNETT, BEVERLY
21924	ALMOND, JOHNNY
23108	KIM, JI H
23116	OCCUPANT UNKNOWN,
23120	WARMUSKERKEN, MICHAEL J
23124	CARPENTER, JANET L
23126	MOORE, DAWN B
23128	CYR, FRANK
23130	MORROW, ROBERT
23132	REYNOLDS, TIM K
23140	CEJA, ELVA
23144	VARGAS, MARTHA
23150	OCCUPANT UNKNOWN,
23482	RODRIGUEZ, PRIMITI
23711	P W PIPE COMPANY

Target Street	Cross Street	Source
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PATTERSON AVE 1995

4082	GREY HILL ELECTRIC INC
4210	FOUR STAR FORKLIFT CO
19971	BROOKER, CHARLES A
20050	STANLEY, JOHN M
20111	WILKERSON, RONALD W
20210	ANGLE, EDWARD
20281	KNUDSEN, ARTHUR E
24021	LOPEZ, MARY M
24031	PAGE, LEONARD E
24041	DENHOED, ROBERT
26499	GUNN, KATHRYN A
26508	THOMSON, WILLIAM I
26675	OCCUPANT UNKNOWNN
26686	ZAGONE, MARIO
26705	VANHEEL, MATHIJS
26715	GREENE, JOSEPH A
26735	MORRISON, THOMAS
26750	CHRISTIAN, JEFFREY D
26765	OCCUPANT UNKNOWNN
26780	KOZAK, LELO
26815	MINER, DAVID
26830	AMEND, EDWARD C
26840	WESNER, SUSAN
26851	BRINKERHOFF, MORRIS N
26880	YOUNGBLOOD, CHARLES
26885	HUFFMAN, RANDY S
26889	SHIMASAKI, DEAN
26890	NELSON, LEONA
26935	HOUGH, DANIEL
26950	MOSLEY, SAUNDRA S
27280	BAKER, WILLIAM E

Target Street	Cross Street	Source
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RIDER ST 1995

1770	WELCH, ARTHUR
20164	YOUNG, THELMA L
20261	BROWN, WENDELL F
20278	DEPREIST, LUANE
20285	MEYERS, LOUIS
20314	WATKINS, JEANNIE
20333	GODAIR, DENNIS
20356	OCCUPANT UNKNOWNN
20365	OCCUPANT UNKNOWNN
20376	CHAVEZ, C
20395	PRICE, MICHAEL C
20396	SMITH, HESTER
20416	OCCUPANT UNKNOWNN
20434	BEECHER, GEORGE K
20525	WILLIAMS, A
20550	PLANTHABER, WESLEY
20562	OCCUPANT UNKNOWNN
20571	WEBB, ROBERT L
20587	HOWSE, JOHN E
20602	CLINTON, BOB
20624	OCCUPANT UNKNOWNN
20638	PAYTON, WENDELL
20652	HERMANSON, MELVIN
20653	SHEPPARD, PEARL
20678	RAMIRES, EDUARDO
20770	SHAMBLIN, JOHN
20790	ALLEN, DEBORAH L
20801	ROBERTS, ROY
20810	BOLTINGHOUSE, ROGER
20830	OCCUPANT UNKNOWNN
20850	MACLEOD, RAY
20883	LINDSEY, M
20908	HORN, R W
20910	OCCUPANT UNKNOWNN
20940	ANDRUS, LOUIE
20950	OCCUPANT UNKNOWNN
20970	LIMA, GEORGE
21010	OCCUPANT UNKNOWNN
21060	OCCUPANT UNKNOWNN
21090	PAGE, SALLIE L
21091	MEAD VALLEY COMMUNITY CTR
	MEAD VALLEY SENIOR NUTRITION
21100	OCCUPANT UNKNOWNN
21145	BUCKNER, MAPLE
21162	CARR, LOUIS S
21210	DUNCAN, MARY L
21220	BIVENS, VELMA
21225	OCCUPANT UNKNOWNN
21240	FRANK, GENEVA
21251	OCCUPANT UNKNOWNN

Target Street	Cross Street	Source
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RIDER ST 1995 (Cont'd)

21275	GUSTIN, TERRY
21331	ZEIGLER, FRANK
21341	SUNDS, RANDI
21385	DUENAS, JOSE
21401	WAYNE, DAVID
21411	FINCH, E K
21431	OCCUPANT UNKNOWNN
21521	OCCUPANT UNKNOWNN
21550	PATTERSON, ALTHEA
21601	OCCUPANT UNKNOWNN
21630	NAUSLAR, HAL
21631	RICHTER, GIGI M
21643	OCCUPANT UNKNOWNN
21650	FITZ, OTIS
21651	OCCUPANT UNKNOWNN
21667	ALLEN, BUELAH
21760	MOORE, LOUIS J
21785	HUTCHISON, VERNON C
21860	OCCUPANT UNKNOWNN
21870	KASPROWICZ, CLARA
21907	FELTON, B L
21924	ALLMOND, J
	NICOLIS, ALFONSO
21951	MCEACHERN, BETTY
21976	LOZA, SILVIA
21983	OCCUPANT UNKNOWNN
23106	OCCUPANT UNKNOWNN
23108	KIM, JIHEUNG
23116	LAFFERTY, ADELA
23120	OCCUPANT UNKNOWNN
23124	OCCUPANT UNKNOWNN
23126	OCCUPANT UNKNOWNN
23128	CYR, FRANK
23130	MORROW, ROBERT
23132	REYNOLDS, TIM K
23138	DRUMMOND, SHAWNA
23140	TAPIA, CRUZ H
23144	RODRIGUEZ, MANUEL
23148	ZYLKA, ANN
23150	GARCIA, BENITA D
23482	RODRIGUEZ, S
23615	HILL, DOUGLAS M
23711	PACIFIC WESTERN
23840	MC ANALLY FEED MILL

Target Street	Cross Street	Source
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PATTERSON AVE 1992

19971	BROOKER, CHARLES A
20170	STEINHART, RICHARD S
20210	HANNA, ANN
26499	GUNN, KATHRYN A
26508	THOMSON, WILLIAM I
26675	LOGSTON, CHARLIE L
26705	VANHEEL, MATHIJS
26780	KOZAK, LELO
26851	BRINKERHOFF, MORRIS N
26880	YOUNGBLOOD, CHARLES
26889	SHIMASAKI, DEAN
26890	GLENN, VINCENT W
	NELSON, LEONA
26935	HOUGH, DANIEL
27190	SCHULTZ, DANIEL
27280	BAKER, WILLIAM E

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

RIDER ST 1992

20164	YOUNG, THELMA L
20278	DEPREIST, LUANE
20285	MEYERS, LOUIS
20333	GODAIR, DENNIS
20356	GRAY, GEORGE H
20396	SMITH, HESTER
20434	BEECHER, GEORGE K
20525	WILLIAMS, A
20550	PLANTHABER, WESLEY
20571	WEBB, ROBERT L
20602	CLINTON, BOB
20638	PAYTON, WENDELL
20649	KAMMERER, THOS C
20790	ALLEN, DEBBIE L
20910	SANCHEZ, S
20940	ANDRUS, LOUIE
20970	LIMA, GEORGE
21060	WILLIAMS, VIVIAN B
21090	PAGE, SALLIE L
21091	MEAD VLY CMNTY CNTR
21162	CARR, LOUIS S
21210	DUNCAN, MARY L
21220	BIVENS, VELMA
21240	FRANK, GENEVA
21275	GUSTIN, TERRY
21331	ZEIGLER, FRANK
21341	SUNDS, RANDI
21401	COWARD, DAVID
21521	WILSON, LAVENA
21550	WICKLIFFE, EVELYN
21601	FRAZIER, JESSE
21667	ALLEN, BUELAH
21870	KASPROWICZ, CLARA
21907	FELTON, BARNEY L
21924	ALLMOND, J
	NICOLIS, ALFONSO
23108	KIM, JIHEUNG
23128	CYR, FRANK
23130	MORROW, ROBERT
23132	REYNOLDS, TIM K
23144	CASTELLANOS, RAMON
23150	GARCIA, BENITA D
23482	RODRIGUEZ, S
23615	HILL, DOUGLAS M
23711	P W PIPE CO

Target Street	Cross Street	Source
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PATTERSON AVE 1985

PATTERSON AV 92370
PERRIS

17601	MATTIOLI BARBARA	943-2884	4
17671	REEK IVAN A	657-3506	1
	REEK IVAN TRUCKING	**653-4685**	1
17760	STEELE DONALD R	653-6372	9
17840	**KEN EQUIPMENT**	**943-1852**	**+5**
18799	VIDELA ESTHER L	657-5607	0
19755	DRAKE RONALD	657-5432	0
19971	BROOKER CHARLES A	657-4621	
20121	XXXX	00	
20170	**WILSONS LANDSCAPING**	**657-1025**	0
	WILSONS TREE FARM	**657-1025**	
20281	YOUNG TRACY	943-3323	+5
20335	WILLIAMS LAWSON	657-5956	3
24025	WARE JOHNNIE MAE	657-4132	
24031	STEPPE STEVEN	657-3948	+5
26499	GUNN MICHAEL	657-3673	4
26508	THOMSON WM I	657-4983	
26675	LOGSTON C L	657-3945	0
26686	ZEZULA NANCY	943-2259	4
26705	SWALL GARY	657-4980	3
26735	DELANDA ADRIAN	657-0800	3
26765	BAKER JOHNIE	657-5897	
26815	PICA PETER	657-7856	3
26830	CRUZE V P	657-5068	1
26840	STIRES ROBT E	657-3218	0
26851	BRINKERHOFF MORRIS	657-6530	6
26880	YOUNGBLOOD CHAS	657-0871	+5
26889	SHIMASAKI DEAN	657-5750	2
26890	XXXX	00	
26935	HOUGH DANL	657-2235	+5
	HOUGH DANL	657-8595	+5
26946	XXXX	00	

♦ 4 BUS 28 RES 6 NEW

Target Street	Cross Street	Source
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RIDER ST 1985

RIDER 92370 PERRIS

20020	GOFF D	943-3727	+5
20164	CLARK DEANNA	943-1608	+5
	YOUNG ALFRED A	657-3459	
20264	XXXX	00	
20285	**KRAKIN KRAFTS**	**657-2251**	+5
20296	HENDRICKS GERALD	657-6657	+5
20333	WEBBER CHARLES	682-2654	9
20356	XXXX	00	
20396	SMITH HESTER	657-9104	+5
20416	XXXX	00	
20434	BEECHER GEORGE K	657-2255	9
20525	BLUNT KAREN	657-9839	+5
20545	WREN LENZIE	657-8320	0
20550	XXXX	00	
20571	XXXX	00	
20601	XXXX	00	
20602	CLINTON BOB	682-6619	3
20624	MCDONALD MARY C	657-5274	6
20638	BLUNT KAREN	657-4126	+5
	PAYTON BROS TRK SV	**683-4970**	
	PAYTON WENDELL	657-5394	6
20649	KAMMERER T C	657-4749	
20653	XXXX	00	
20801	ROBERTS ROY	657-5005	
20851	XXXX	00	
20910	SANCHEZ SALVADOR	657-8513	1
20940	THOMPSON KENNETH D	943-1947	+5
20970	XXXX	00	
21010	XXXX	00	
21060	WILLIAMS VIVIAN B	657-6876	7
21090	PAGE SALLIE LEE	657-6097	
	PAGE WENDELL H	657-6097	9
21091	**COMMUNITY DEVELPMNT**	**657-0685**	4
	COMNTY DEVELOPMENT	**781-7083**	4
	MEAD VLY SR CITIZNS	**657-2254**	9
	SENIOR CTZN NUTRITN	**657-0292**	4
21100	XXXX	00	
21145	**DUNCANS BEAUTY SHOP**	**657-8092**	3
21162	XXXX	00	
21210	DUNCAN MARY LOWE	657-4237	4
21220	BIVENS VELMA	657-9967	1
21240	XXXX	00	
21251	AKER JESSIE M	657-4875	
21331	ZEIGLER FRANK	943-3892	+5
21411	XXXX	00	
21431	STANLEY EDNA	657-9942	0
21511	XXXX	00	
21521	XXXX	00	
21643	**GORDON LAWN CARE**	**657-0476**	+5
21651	WALKER RAPHAEL	657-5387	7
21667	ALLEN BUELAH	657-5430	
21700	XXXX	00	
21891	**HEBRON MISSIONRY CH**	**657-6845**	+5
21907	FELTON B L	657-6763	
21931	XXXX	00	
21976	XXXX	00	
23106	COLLINS ELMER P	657-2764	7
23108	KIM JI HEUNG	657-7830	0
23120	BOWLES RONALD	943-1405	3
23124	CONTABILE MILDRED	657-1024	+5
23126	DOYLE C B	657-4573	
23128	CYR FRANK	657-1567	9
23132	REYNOLDS TIM K	943-4120	+5
23138	MUNOZ CHRISTINE	943-1387	+5
23140	XXXX	00	
23148	XXXX	00	
23340	**MGANALLY EGG ENTPR**	**657-3987**	
23342	XXXX	00	
23480	**RAMOS TRINIDAD**	**943-1168**	3
24885	**KAUFMAN BROAD HOME**	**657-5101**	1
26250	SERNA FAUSTINO	943-3981	+5
27050	SHARER JOHN	657-0374	+5

★ 12 BUS 60 RES 16 NEW

Target Street	Cross Street	Source
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PATTERSON AVE 1980

PATTERSON 92370 PERRIS

17600★	**TRICKS FOR TRUCKS**	**653-5915**	5
	UNGER JIM	657-6575	+0
17688	CAMPUZANO HELEN C	653-2041	7
17700	BROUGH RICHARD	653-8030	8
17760	STEELE DONALD R	653-6372	9
18643	XXXX	00	
18663	XXXX	00	
18799	VIDELA ESTHER L	657-5607	+0
19543	TOTH JOE W	657-4123	
19755	DRAKE RONALD	657-5432	+0
★	**METROPLTN WATER DST**	**653-1031**	6
19851	XXXX	00	
19971	BROOKER CHAS A	657-4621	
20111	XXXX	00	
20121	XXXX	00	
20170	WILSON DOUGLAS C	657-1025	+0
20281	COLTHARP LARRY	657-9741	+0
20379	FIELDS RONALD L	653-0377	+0
24025	WARE JOHNNIE MAE	657-4132	
24031	DUBOIS ANNA F	657-1310	+0
26365	THIESSEN MAUDE	657-2849	8
26508	THOMSON WM I	657-4983	5
26675	LOGSTON C L	657-3945	+0
26686	MODESETT H A	657-3061	9
26715	CHICKLO C	657-3080	+0
26735	ROCOVITS JOHN	657-4021	6
26750	XXXX	00	
26765	BAKER JOHNNY L	657-5897	
26830	XXXX	00	
26840	STIRES ROBT E	657-3218	+0
26851	BRINKERHOFF MORRIS	657-6530	6
26880	WILLIAMS DOUG	657-9914	+0
26890	GLENN VINCENT W	657-2617	9
26946	HOWELL JAS T	657-6402	+0
★	2 BUS 32 RES	12 NEW	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

RIDER ST 1980

RIDER 92370 PERRIS

306	PETSCH AMALIA D	657-2004	6
	VEUHOFF E	657-5767	6
316	SERNA S K	657-5310	6
326★	**PERRIS MEAT CO**	**653-7221**	**+0**
336	VEUHOFF D L	657-5359	9
	VEUHOFF RICHARD	657-5359	6
20164	YOUNG ALFRED A	657-3459	4
20296	XXXX	00	
20333	WEBBER CHARLES	682-2654	9
20356	ROBINSON WALTER J	781-3923	7
20416	PICARD MODESTINE	657-9489	+0
20434	BEECHER GEORGE K	657-2255	9
20527	XXXX	00	
20545	WREN LENZIE	657-8320	+0
20608	XXXX	00	
20624	MCDONALD MARY C	657-5274	6
20638★	**PAYTON BROS TRK SV**	**683-4970**	4
	PAYTON WENDELL	657-5394	6
20649	KAMMERER T C	657-4749	
20801	ROBERTS ROY	657-5005	
20851	GOUTHIER EDDIE T SR	657-2960	9
20940	REYNOSO BRUNO	657-4488	9
20950	XXXX	00	
20951	XXXX	00	
20970	XXXX	00	
21010	ANDERSON HOWARD	689-1585	+0
21060	WILLIAMS VIVIAN B	657-6876	7
21090	PAGE SALLIE LEE	657-6097	9
	PAGE WENDELL H	657-6097	
21091★	**MEAD VLLY SR CTZN**	**657-2254**	9
21100	CAMPBELL DONALD REV	657-9167	+0
21162	CARR LOUIS S	657-4736	4
21210	DUNCAN MARY LOWE	657-3817	
21240	WHITE ZEOLA B	657-3295	
21251	AKER JESSIE M	657-4875	
21401	XXXX	00	
21411	HILL VELMA W	657-5704	
21431	STANLEY EDNA	657-9942	+0
21511	XXXX	00	
21521★	**OLIVER MAINTENANCE**	**788-6113**	**+0**
21651	WALKER RAPHAEL	657-5387	7
21667	ALLEN BUELAH	657-5430	5
21700	BRADLEY RAYMOND G	657-4016	7
21760	MOORE SYLVIA A	657-9443	+0
21891	COOPER S L REV	657-6845	4
21907	FELTON B L	657-6763	5
21931	STINNETT BEVERLY	657-2859	8
21976	CHAPMAN BOB	683-5250	+0
	CHAPMAN ROBERT B	657-3783	5
21983	THOMPSON RONALD W	683-6676	9
23040	XXXX	00	
23106	COLLINS ELMER P	657-2764	7
23108	KIM JI HEUNG	657-7830	+0
23120	LOWREY JOHN	657-2293	9
23126	DOYLE C B	657-4573	5
23128	CYR FRANK	657-1567	9
23138	GONZALES JESUS M	657-6478	+0
23148	VEAL GARY	657-6179	9
23170	XXXX	00	
23340★	**MCANALLY EGG ENTPRS**	**657-3987**	
23990	CURTIS MURLE	657-5627	+0
24685	XXXX	00	
24885★	**CELTIC CORP**	**657-5101**	9
25336	XXXX	00	
25491	AYERS SHERMAN	657-6493	7
26250	SERNA FAUSTINO R	657-2675	8
26591	ENNIS MARLENE	657-6132	9

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

RIDER ST 1980

RIVE

..RIDER 92370 CONT..

26615 XXXX 00

★ 6 BUS 62 RES 12 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

PATTERSON AVE 1976

PATTERSON 92370 PERRIS

17600	*TRICKS FOR TRUCKS	653-5915	5
17688	XXXX	00	
17760	STEELE DONALD R	686-2723	+6
18643	XXXX	00	
18663	XXXX	00	
19543	TOTH JOE W	657-4123	
19755	*METROPOLTN WTR DIST	653-1031	+6
19851	HARPER SINORA L	657-4613	4
19971	BROOKER CHAS A	657-4621	
20111	WILKERSON RONALD	657-3503	+6
20121	CLARK BARBARA	657-2673	+6
24025	WARE JOHNNIE MAE	657-4132	
26508	THOMSON WM I	657-4983	5
26686	MODESETT H A	657-6962	4
26735	ROCOVITS JOHN	657-4021	+6

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

PATTERSON AVE 1976

..PATTERSON 92370 CONT..

26765	BAKER JOHNNY L	657-5897
26830	LINDEN HENRY	657-4218
26851	BRINKERHOFF MORRIS	657-6530+6
26880	GLENN VINCENT W	657-2617

* 2 BUS 17 RES 6 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

RIDER ST 1976

RIDER 92370 PERRIS

```
   23  XXXX                  00
  306 PETSCH AMALIA D        657-2004+6
      VEUHOFF E              657-5767+6
  316 SERNA CARLOS           657-5310+6
  326*PERRIS MEAT CO         657-5887+6
  336 VEUHOFF RICHARD        657-5359+6
19960  XXXX                  00
20164 YOUNG ALFRED A         657-3459 4
20296 FAYE JOS               657-2928+6
20527 CONNER JACK            657-2015+6
20608  XXXX                  00
20624 MCDONALD MARY C        657-5274+6
20638*PAYTON BROS TRK SV     683-4970 4
      PAYTON WENDELL         657-5394+6
20649 KAMMERER T C           657-4749
20801 ROBERTS ROY            657-5005
20851 GOUTHIER EDDIE T SR    657-5434+6
20909 WHITE WILLHEMINA       657-6689 5
20970 MITCHELL SORENCE E     657-6033+6
21091  XXXX                  00
21162 CARR LOUIS S           657-4736 4
21210 DUNCAN MARY LOWE       657-3817
21240 WHITE ZEOLA B          657-3295
21251 AKER JESSIE M          657-4875
21401 EDWARDS B              657-6595 5
21411 HILL VELMA W           657-5704
21511 ROLAND R               657-8920+6
21651  XXXX                  00
21667 ALLEN BUELAH           657-5430 5
21891 COOPER S L REV         657-6845 4
21907 FELTON B L             657-6763 5
21976 CHAPMAN ROBT SMSGT     657-3783 5
23040*ROBINSON&LAMEY SALE     657-5119+6
23108  XXXX                  00
23126 DOYLE C B              657-4573 5
23170  XXXX                  00
23340*MCANALLY EGG ENTPRS     657-7919+6
     *MCANALLY EGG ENTRPR    657-3987
24685*CELTIC CORP             657-5101 5
25336  XXXX                  00
26250  XXXX                  00
26591 ENNIS MARLENE J        657-4969+6
26615  XXXX                  00
     *   6 BUS   37 RES   15 NEW
```

Rider and Patterson
Rider and Patterson
Perris, CA 92570

Inquiry Number: 6407949.2s
March 17, 2021

EDR Summary Radius Map Report

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

RIDER AND PATTERSON
PERRIS, CA 92570

COORDINATES

Latitude (North):	33.8286750 - 33˚ 49' 43.23''
Longitude (West):	117.2550410 - 117˚ 15' 18.14''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	476399.8
UTM Y (Meters):	3742995.5
Elevation:	1561 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	TP
Source:	U.S. Geological Survey

Target Property:	E
Source:	U.S. Geological Survey

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
RIDER AND PATTERSON
PERRIS, CA 92570

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	MCANALLY ENTERPRISES	23480 RIDER ST	LUST, SWEEPS UST, CA FID UST, Cortese, HIST...	Lower	13, 0.002, NNE
A2	MCANALLY ENTERPRISES	23480 RIDER ST	LUST, CERS	Lower	13, 0.002, NNE
3	MWD- CHEMICAL UNLOAD	19765 PATTERSON AVE	RCRA NonGen / NLR	Lower	1265, 0.240, North
4	AOC LLC	19991 SEATON AVENUE	CORRACTS, RCRA-TSDF, RCRA-LQG, ENVIROSTOR, HIST...	Higher	1447, 0.274, WNW
5	VAL VERDE CONTINUATI	NEVADA AVENUE/MORGAN	ENVIROSTOR, SCH	Lower	3036, 0.575, NNE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

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

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 CORRACTS facilities list

CORRACTS: A review of the CORRACTS list, as provided by EDR, and dated 12/14/2020 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC LLC EPA ID:: CAD059270975	***19991 SEATON AVENUE***	***WNW 1/4 - 1/2 (0.274 mi.)***	***4***	***10***

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: A review of the RCRA-TSDF list, as provided by EDR, and dated 12/14/2020 has revealed that there is 1 RCRA-TSDF site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC LLC EPA ID:: CAD059270975	***19991 SEATON AVENUE***	***WNW 1/4 - 1/2 (0.274 mi.)***	***4***	***10***

State- and tribal - equivalent CERCLIS

ENVIROSTOR: A review of the ENVIROSTOR list, as provided by EDR, and dated 10/26/2020 has revealed that there are 2 ENVIROSTOR sites within approximately 1 mile of the target property.

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC LLC Facility Id: 80001432 Status: Active	***19991 SEATON AVENUE***	***WNW 1/4 - 1/2 (0.274 mi.)***	***4***	***10***

Lower Elevation	Address	Direction / Distance	Map ID	Page
VAL VERDE CONTINUATI Facility Id: 33010050 Status: No Further Action	***NEVADA AVENUE/MORGAN***	***NNE 1/2 - 1 (0.575 mi.)***	***5***	***11***

State and tribal leaking storage tank lists

LUST: A review of the LUST list, as provided by EDR, has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global ID: T0606500587	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A1***	***9***
MCANALLY ENTERPRISES Database: RIVERSIDE CO. LUST, Date of Government Version: 01/13/2021 Database: LUST, Date of Government Version: 12/04/2020 Status: Completed - Case Closed Facility Id: 9915151 Global Id: T0606500587 Facility Status: 9	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A2***	***9***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

SWEEPS UST: 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.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES Status: A Tank Status: A Comp Number: 59854	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A1***	***9***

CA FID UST: 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.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A1***	***9***
Facility Id: 33006812				
Status: A				

Other Ascertainable Records

RCRA NonGen / NLR: A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 12/14/2020 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MWD- CHEMICAL UNLOAD	19765 PATTERSON AVE	N 1/8 - 1/4 (0.240 mi.)	3	9
EPA ID:: CAL000035451				

Cortese: A review of the Cortese list, as provided by EDR, and dated 12/17/2020 has revealed that there is 1 Cortese site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A1***	***9***
Cleanup Status: COMPLETED - CASE CLOSED				

HIST CORTESE: A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCANALLY ENTERPRISES	***23480 RIDER ST***	***NNE 0 - 1/8 (0.002 mi.)***	***A1***	***9***
Reg Id: 083303464T				

HWP: A review of the HWP list, as provided by EDR, and dated 11/13/2020 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

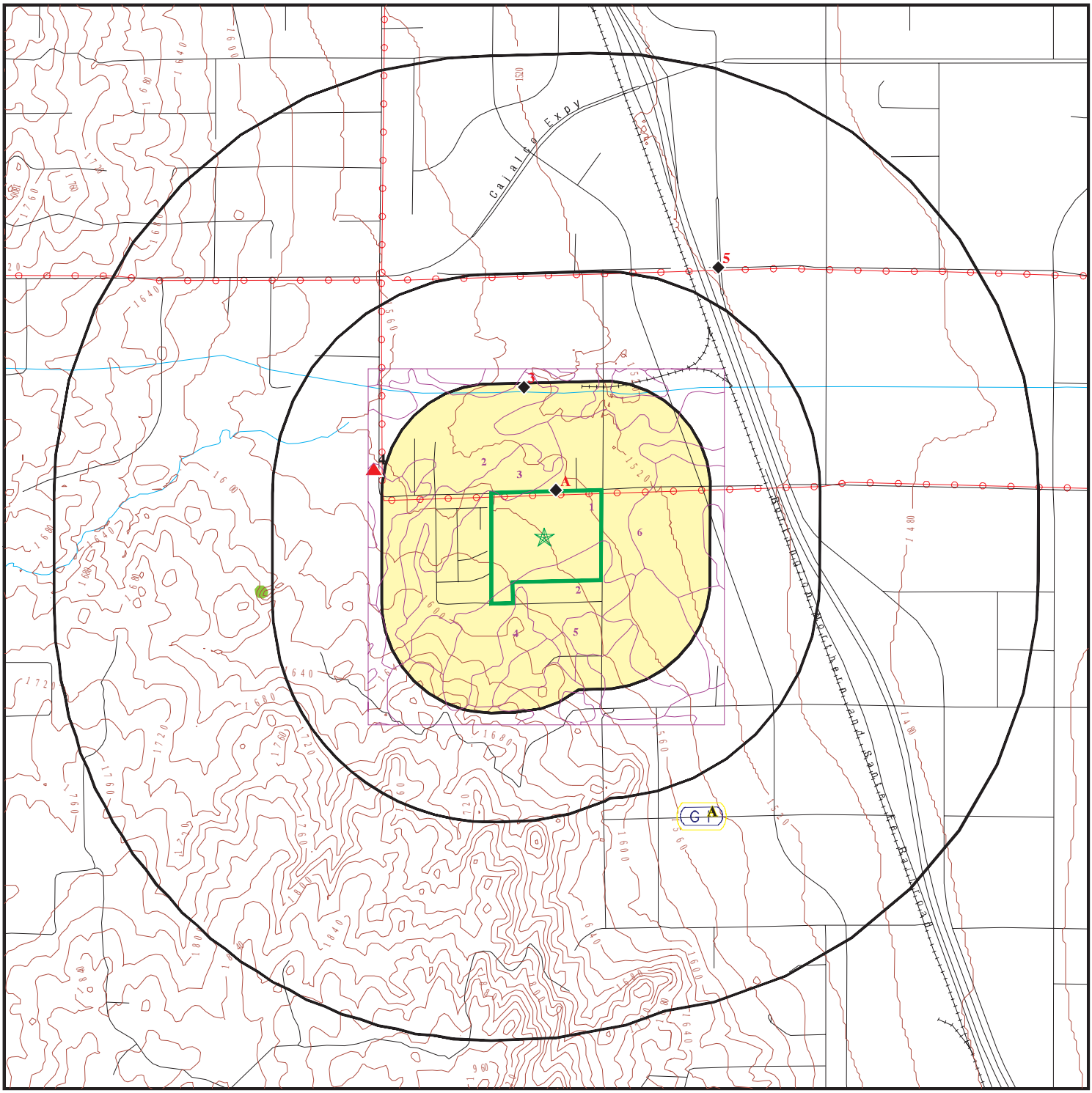
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AOC LLC	***19991 SEATON AVENUE***	***WNW 1/4 - 1/2 (0.274 mi.)***	***4***	***10***
EPA Id: CAD059270975				
Cleanup Status: CLOSED				

Count: 4 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
PERRIS	1026208409	4413 PATTERSON H&M	4413 PATTERSON AVE	92571	ECHO
PERRIS	S121668185	RIDER ST	S RIDER ST & W REDLANDS AVE	92571	CIWQS
PERRIS	S123537965	LEO'S AUTO REPAIR	140 W WALNUT ST #B9	92571	CERS HAZ WASTE
RIVERSIDE COUNTY	S107537442		@ RAMONA EXPRESSWAY & RIDER ST		CDL

OVERVIEW MAP - 6407949.2S



0 1/4 1/2 1 Miles

- 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

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: Rider and Patterson	CLIENT: Hazard Management Consulting
ADDRESS: Rider and Patterson Perris CA 92570	CONTACT: Troy Taylor
LAT/LONG: 33.828675 / 117.255041	INQUIRY #: 6407949.2s DATE: March 17, 2021 3:10 pm

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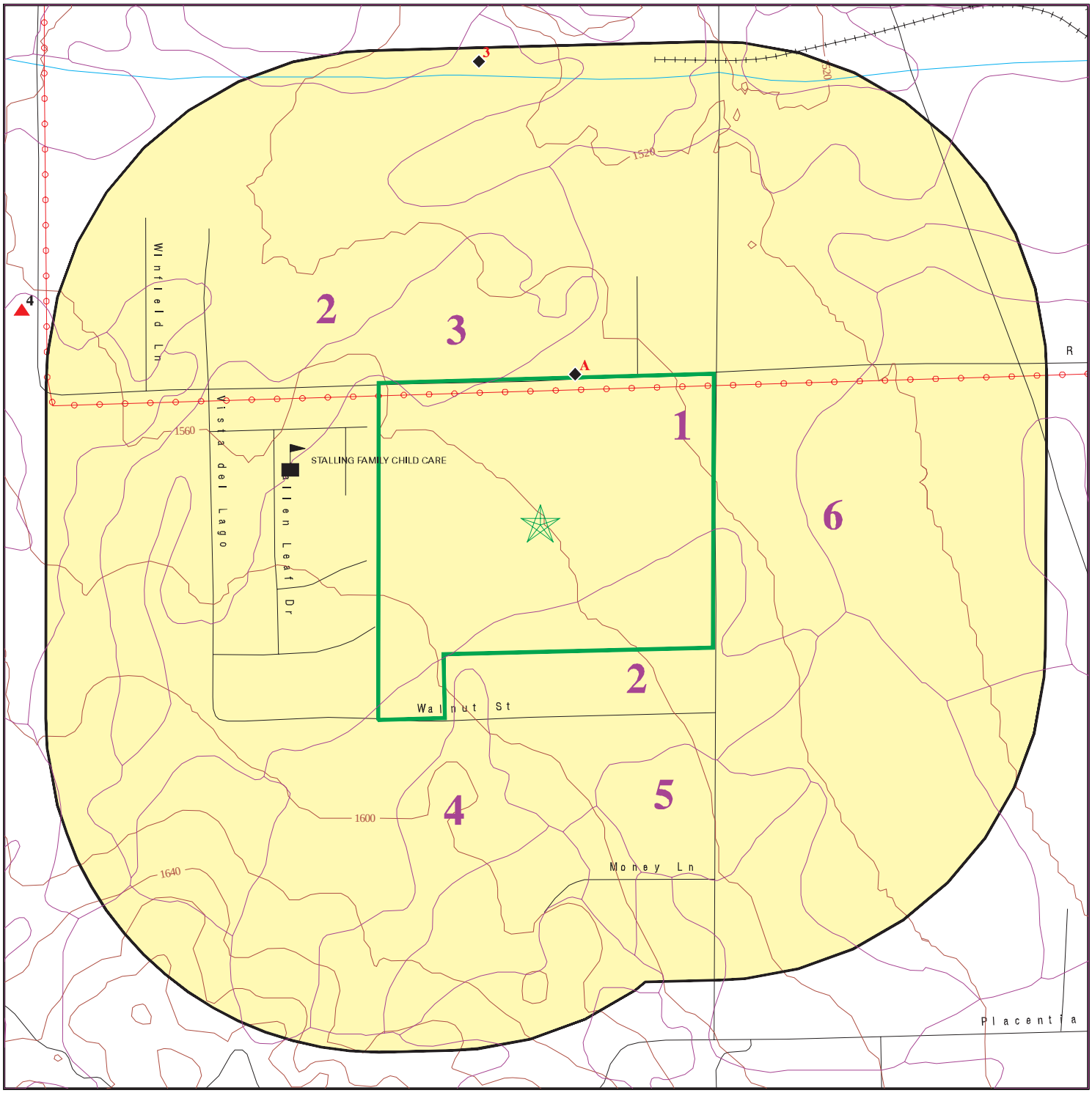
DETAIL MAP - 6407949.2S



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

0 1/16 1/8 1/4 Miles

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: Rider and Patterson	CLIENT: Hazard Management Consulting
ADDRESS: Rider and Patterson Perris CA 92570	CONTACT: Troy Taylor INQUIRY #: 6407949.2s
LAT/LONG: 33.828675 / 117.255041	DATE: March 17, 2021 3:12 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	1	0	NR	1
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	1	NR	NR	1
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	0	NR	NR	NR	0
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 CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	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	1	1	NR	2
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		2	0	0	NR	NR	2

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								
INDIAN VCP	0.500		0	0	0	NR	NR	0
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	0	NR	NR	0
HAULERS	0.001		0	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	0.001		0	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	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		1	0	NR	NR	NR	1
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		1	0	NR	NR	NR	1
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	1	NR	NR	NR	1
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	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	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		1	0	0	NR	NR	1
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	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		1	0	0	NR	NR	1
HWP	1.000		0	0	1	0	NR	1
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	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	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	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
HWTS	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	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	6	1	4	1	0	12

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

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
A1 **NNE** **< 1/8** **0.002 mi.** **13 ft.** **Relative:** **Lower**	**MCANALLY ENTERPRISES** **23480 RIDER ST** **PERRIS, CA 92570** **Click here for full text details** **LUST** Facility Status Case Closed Global ID T0606500587 **SWEEPS UST** Status A Tank Status A Comp Number 59854 **CA FID UST** Facility Id 33006812 Status A **Cortese** Cleanup Status COMPLETED - CASE CLOSED **HIST CORTESE** Reg Id 083303464T	**LUST** **SWEEPS UST** **CA FID UST** **Cortese** **HIST CORTESE**	**S101590216** **N/A**
A2 **NNE** **< 1/8** **0.002 mi.** **13 ft.** **Relative:** **Lower**	**MCANALLY ENTERPRISES** **23480 RIDER ST** **PERRIS, CA 92570** **Click here for full text details** **LUST** Status Completed - Case Closed Facility Id 9915151 Global Id T0606500587 Facility Status 9	**LUST** **CERS**	**S106410452** **N/A**
3 **North** **1/8-1/4** **0.240 mi.** **1265 ft.** **Relative:** **Lower**	**MWD- CHEMICAL UNLOADING FACILITY** **19765 PATTERSON AVE** **PERRIS, CA 92570** **Click here for full text details** **RCRA NonGen / NLR** EPA Id CAL000035451	**RCRA NonGen / NLR**	**1024787652** **CAL000035451**

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
4 WNW 1/4-1/2 0.274 mi. 1447 ft. Relative: Higher	**AOC LLC 19991 SEATON AVENUE PERRIS, CA 92570** **Click here for full text details**	**CORRACTS RCRA-TSDF RCRA-LQG ENVIROSTOR HIST UST RAATS EMI HWP NPDES CIWQS CERS**	**1000238960 CAD059270975**

CORRACTS
EPA ID: CAD059270975

RCRA-TSDF
EPA Id CAD059270975

RCRA-LQG
EPA Id CAD059270975

ENVIROSTOR
Facility Id 80001432
Status Active

HIST UST
Facility Id 00000019398

RAATS
Status 01
Facility ID CAD059270975

EMI
Facility Id 117140

HWP
EPA Id CAD059270975
Cleanup Status CLOSED

NPDES
Facility Status Active

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
5 NNE 1/2-1 0.575 mi. 3036 ft. Relative: Lower	**VAL VERDE CONTINUATION HIGH SCHOOL NEVADA AVENUE/MORGAN STREET PERRIS, CA 92571** **Click here for full text details** **ENVIROSTOR** Facility Id 33010050 Status No Further Action **SCH** Facility Id 33010050 Status No Further Action	**ENVIROSTOR SCH**	**S105628757 N/A**

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
CA	AST	Aboveground Petroleum Storage Tank Facilities	California Environmental Protection Agency	07/06/2016	07/12/2016	09/19/2016
CA	BROWNFIELDS	Considered Brownfieds Sites Listing	State Water Resources Control Board	12/17/2020	12/17/2020	03/09/2021
CA	CA BOND EXP. PLAN	Bond Expenditure Plan	Department of Health Services	01/01/1989	07/27/1994	08/02/1994
CA	CA FID UST	Facility Inventory Database	California Environmental Protection Agency	10/31/1994	09/05/1995	09/29/1995
CA	CDL	Clandestine Drug Labs	Department of Toxic Substances Control	06/30/2019	05/28/2020	08/12/2020
CA	CERS	CalEPA Regulated Site Portal Data	California Environmental Protection Agency	10/19/2020	10/19/2020	01/07/2021
CA	CERS HAZ WASTE	CERS HAZ WASTE	CalEPA	10/19/2020	10/19/2020	01/07/2021
CA	CERS TANKS	California Environmental Reporting System (CERS) Tanks	California Environmental Protection Agency	10/19/2020	10/19/2020	01/07/2021
CA	CHMIRS	California Hazardous Material Incident Report System	Office of Emergency Services	09/30/2020	10/19/2020	01/07/2021
CA	CIWQS	California Integrated Water Quality System	State Water Resources Control Board	11/30/2020	12/01/2020	02/12/2021
CA	CORTESE	"Cortese" Hazardous Waste & Substances Sites List	CAL EPA/Office of Emergency Information	12/17/2020	12/17/2020	03/09/2021
CA	CPS-SLIC	Statewide SLIC Cases (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021
CA	CUPA LIVERMORE-PLEASANTON	CUPA Facility Listing	Livermore-Pleasanton Fire Department	05/01/2019	05/14/2019	07/17/2019
CA	DEED	Deed Restriction Listing	DTSC and SWRCB	11/30/2020	12/01/2020	02/12/2021
CA	DRYCLEAN AVAQMD	Antelope Valley Air Quality Management District Drycleaner L	Antelope Valley Air Quality Management Distri	11/23/2020	11/24/2020	02/10/2021
CA	DRYCLEAN SOUTH COAST	South Coast Air Quality Management District Drycleaner Listi	South Coast Air Quality Management District	11/17/2020	11/18/2020	02/04/2021
CA	DRYCLEANERS	Cleaner Facilities	Department of Toxic Substance Control	11/23/2020	11/25/2020	02/10/2021
CA	EMI	Emissions Inventory Data	California Air Resources Board	12/31/2018	06/16/2020	08/28/2020
CA	ENF	Enforcement Action Listing	State Water Resoruces Control Board	10/16/2020	10/19/2020	01/07/2021
CA	ENVIROSTOR	EnviroStor Database	Department of Toxic Substances Control	10/26/2020	10/26/2020	01/13/2021
CA	Financial Assurance 1	Financial Assurance Information Listing	Department of Toxic Substances Control	10/13/2020	10/14/2020	01/04/2021
CA	Financial Assurance 2	Financial Assurance Information Listing	California Integrated Waste Management Board	11/12/2020	11/13/2020	01/29/2021
CA	HAULERS	Registered Waste Tire Haulers Listing	Integrated Waste Management Board	11/23/2020	11/23/2020	02/08/2021
CA	HAZNET	Facility and Manifest Data	California Environmental Protection Agency	12/31/2019	04/15/2020	07/02/2020
CA	HIST CAL-SITES	Calsites Database	Department of Toxic Substance Control	08/08/2005	08/03/2006	08/24/2006
CA	HIST CORTESE	Hazardous Waste & Substance Site List	Department of Toxic Substances Control	04/01/2001	01/22/2009	04/08/2009
CA	HIST UST	Hazardous Substance Storage Container Database	State Water Resources Control Board	10/15/1990	01/25/1991	02/12/1991
CA	HWP	EnviroStor Permitted Facilities Listing	Department of Toxic Substances Control	11/13/2020	11/13/2020	02/01/2021
CA	HWT	Registered Hazardous Waste Transporter Database	Department of Toxic Substances Control	10/05/2020	10/06/2020	12/23/2020
CA	HWTS	Hazardous Waste Tracking System	Department of Toxic Substances Control	10/13/2020	10/14/2020	11/03/2020
CA	ICE	ICE	Department of Toxic Subsances Control	11/13/2020	11/13/2020	02/01/2021
CA	LDS	Land Disposal Sites Listing (GEOTRACKER)	State Water Qualilty Control Board	12/04/2020	12/04/2020	02/18/2021
CA	LIENS	Environmental Liens Listing	Department of Toxic Substances Control	11/24/2020	11/30/2020	02/10/2021
CA	LUST	Leaking Underground Fuel Tank Report (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021
CA	LUST REG 1	Active Toxic Site Investigation	California Regional Water Quality Control Boa	02/01/2001	02/28/2001	03/29/2001
CA	LUST REG 2	Fuel Leak List	California Regional Water Quality Control Boa	09/30/2004	10/20/2004	11/19/2004
CA	LUST REG 3	Leaking Underground Storage Tank Database	California Regional Water Quality Control Boa	05/19/2003	05/19/2003	06/02/2003
CA	LUST REG 4	Underground Storage Tank Leak List	California Regional Water Quality Control Boa	09/07/2004	09/07/2004	10/12/2004
CA	LUST REG 5	Leaking Underground Storage Tank Database	California Regional Water Quality Control Boa	07/01/2008	07/22/2008	07/31/2008
CA	LUST REG 6L	Leaking Underground Storage Tank Case Listing	California Regional Water Quality Control Boa	09/09/2003	09/10/2003	10/07/2003
CA	LUST REG 6V	Leaking Underground Storage Tank Case Listing	California Regional Water Quality Control Boa	06/07/2005	06/07/2005	06/29/2005
CA	LUST REG 7	Leaking Underground Storage Tank Case Listing	California Regional Water Quality Control Boa	02/26/2004	02/26/2004	03/24/2004
CA	LUST REG 8	Leaking Underground Storage Tanks	California Regional Water Quality Control Boa	02/14/2005	02/15/2005	03/28/2005
CA	LUST REG 9	Leaking Underground Storage Tank Report	California Regional Water Quality Control Boa	03/01/2001	04/23/2001	05/21/2001
CA	MCS	Military Cleanup Sites Listing (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021
CA	MILITARY PRIV SITES	Military Privatized Sites (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021
CA	MILITARY UST SITES	Military UST Sites (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
CA	MINES	Mines Site Location Listing	Department of Conservation	12/07/2020	12/08/2020	02/22/2021
CA	MWMP	Medical Waste Management Program Listing	Department of Public Health	10/30/2020	12/01/2020	02/12/2021
CA	NON-CASE INFO	Non-Case Information Sites (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021
CA	NOTIFY 65	Proposition 65 Records	State Water Resources Control Board	12/07/2020	12/09/2020	12/10/2020
CA	NPDES	NPDES Permits Listing	State Water Resources Control Board	11/09/2020	11/10/2020	01/27/2021
CA	OTHER OIL GAS	Other Oil & Gas Projects Sites (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021
CA	PEST LIC	Pesticide Regulation Licenses Listing	Department of Pesticide Regulation	11/30/2020	12/01/2020	02/12/2021
CA	PFAS	PFAS Contamination Site Location Listing	State Water Resources Control Board	12/07/2020	12/08/2020	02/22/2021
CA	PROC	Certified Processors Database	Department of Conservation	12/07/2020	12/08/2020	02/22/2021
CA	PROD WATER PONDS	Produced Water Ponds Sites (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021
CA	PROJECT	Project Sites (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021
CA	RESPONSE	State Response Sites	Department of Toxic Substances Control	10/26/2020	10/26/2020	01/13/2021
CA	RGA LF	Recovered Government Archive Solid Waste Facilities List	Department of Resources Recycling and Recover		07/01/2013	01/13/2014
CA	RGA LUST	Recovered Government Archive Leaking Underground Storage Tan	State Water Resources Control Board		07/01/2013	12/30/2013
CA	SAMPLING POINT	Sampling Point ? Public Sites (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021
CA	SAN FRANCISCO AST	Aboveground Storage Tank Site Listing	San Francisco County Department of Public Hea	11/05/2020	11/06/2020	01/26/2021
CA	SCH	School Property Evaluation Program	Department of Toxic Substances Control	10/26/2020	10/26/2020	01/13/2021
CA	SLIC REG 1	Active Toxic Site Investigations	California Regional Water Quality Control Boa	04/03/2003	04/07/2003	04/25/2003
CA	SLIC REG 2	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Regional Water Quality Control Board San Fran	09/30/2004	10/20/2004	11/19/2004
CA	SLIC REG 3	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	California Regional Water Quality Control Boa	05/18/2006	05/18/2006	06/15/2006
CA	SLIC REG 4	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Region Water Quality Control Board Los Angele	11/17/2004	11/18/2004	01/04/2005
CA	SLIC REG 5	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Regional Water Quality Control Board Central	04/01/2005	04/05/2005	04/21/2005
CA	SLIC REG 6L	SLIC Sites	California Regional Water Quality Control Boa	09/07/2004	09/07/2004	10/12/2004
CA	SLIC REG 6V	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Regional Water Quality Control Board, Victorv	05/24/2005	05/25/2005	06/16/2005
CA	SLIC REG 7	SLIC List	California Regional Quality Control Board, Co	11/24/2004	11/29/2004	01/04/2005
CA	SLIC REG 8	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	California Region Water Quality Control Board	04/03/2008	04/03/2008	04/14/2008
CA	SLIC REG 9	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	California Regional Water Quality Control Boa	09/10/2007	09/11/2007	09/28/2007
CA	SPILLS 90	SPILLS90 data from FirstSearch	FirstSearch	06/06/2012	01/03/2013	02/22/2013
CA	SWEEPS UST	SWEEPS UST Listing	State Water Resources Control Board	06/01/1994	07/07/2005	08/11/2005
CA	SWF/LF (SWIS)	Solid Waste Information System	Department of Resources Recycling and Recover	11/09/2020	11/10/2020	01/14/2021
CA	SWRCY	Recycler Database	Department of Conservation	12/07/2020	12/08/2020	02/22/2021
CA	TOXIC PITS	Toxic Pits Cleanup Act Sites	State Water Resources Control Board	07/01/1995	08/30/1995	09/26/1995
CA	UIC	UIC Listing	Deaprtment of Conservation	02/01/2021	02/19/2021	02/22/2021
CA	UIC GEO	Underground Injection Control Sites (GEOTRACKER)	State Water Resource Control Board	12/04/2020	12/04/2020	02/18/2021
CA	UST	Active UST Facilities	SWRCB	12/04/2020	12/04/2020	02/18/2021
CA	UST CLOSURE	Proposed Closure of Underground Storage Tank (UST) Cases	State Water Resources Control Board	12/02/2020	12/08/2020	02/23/2021
CA	VCP	Voluntary Cleanup Program Properties	Department of Toxic Substances Control	10/26/2020	10/26/2020	01/13/2021
CA	WASTEWATER PITS	Oil Wastewater Pits Listing	RWQCB, Central Valley Region	11/19/2019	01/07/2020	03/09/2020
CA	WDR	Waste Discharge Requirements Listing	State Water Resources Control Board	12/07/2020	12/08/2020	02/22/2021
CA	WDS	Waste Discharge System	State Water Resources Control Board	06/19/2007	06/20/2007	06/29/2007
CA	WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)	State Water Resources Control Board	12/04/2020	12/04/2020	02/18/2021
CA	WIP	Well Investigation Program Case List	Los Angeles Water Quality Control Board	07/03/2009	07/21/2009	08/03/2009
CA	WMUDS/SWAT	Waste Management Unit Database	State Water Resources Control Board	04/01/2000	04/10/2000	05/10/2000
US	2020 COR ACTION	2020 Corrective Action Program List	Environmental Protection Agency	09/30/2017	05/08/2018	07/20/2018
US	ABANDONED MINES	Abandoned Mines	Department of Interior	12/11/2020	12/11/2020	03/02/2021
US	BRS	Biennial Reporting System	EPA/NTIS	12/31/2017	06/22/2020	11/20/2020
US	COAL ASH DOE	Steam-Electric Plant Operation Data	Department of Energy	12/31/2019	12/01/2020	02/09/2021

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	COAL ASH EPA	Coal Combustion Residues Surface Impoundments List	Environmental Protection Agency	01/12/2017	03/05/2019	11/11/2019
US	CONSENT	Superfund (CERCLA) Consent Decrees	Department of Justice, Consent Decree Library	09/30/2020	10/08/2020	01/04/2021
US	CORRACTS	Corrective Action Report	EPA	12/14/2020	12/17/2020	12/22/2020
US	DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations	EPA, Region 9	01/12/2009	05/07/2009	09/21/2009
US	DOCKET HWC	Hazardous Waste Compliance Docket Listing	Environmental Protection Agency	11/03/2020	11/17/2020	02/09/2021
US	DOD	Department of Defense Sites	USGS	12/31/2005	11/10/2006	01/11/2007
US	DOT OPS	Incident and Accident Data	Department of Transporation, Office of Pipeli	01/02/2020	01/28/2020	04/17/2020
US	Delisted NPL	National Priority List Deletions	EPA	12/30/2020	01/14/2021	02/09/2021
US	ECHO	Enforcement & Compliance History Information	Environmental Protection Agency	10/03/2020	10/06/2020	01/04/2021
US	EDR Hist Auto	EDR Exclusive Historical Auto Stations	EDR, Inc.			
US	EDR Hist Cleaner	EDR Exclusive Historical Cleaners	EDR, Inc.			
US	EDR MGP	EDR Proprietary Manufactured Gas Plants	EDR, Inc.			
US	EPA WATCH LIST	EPA WATCH LIST	Environmental Protection Agency	08/30/2013	03/21/2014	06/17/2014
US	ERNS	Emergency Response Notification System	National Response Center, United States Coast	12/14/2020	12/15/2020	12/22/2020
US	FEDERAL FACILITY	Federal Facility Site Information listing	Environmental Protection Agency	04/03/2019	04/05/2019	05/14/2019
US	FEDLAND	Federal and Indian Lands	U.S. Geological Survey	04/02/2018	04/11/2018	11/06/2019
US	FEMA UST	Underground Storage Tank Listing	FEMA	07/21/2020	09/03/2020	11/25/2020
US	FINDS	Facility Index System/Facility Registry System	EPA	11/04/2020	12/01/2020	01/25/2021
US	FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA/Office of Prevention, Pesticides and Toxi	04/09/2009	04/16/2009	05/11/2009
US	FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA	04/09/2009	04/16/2009	05/11/2009
US	FUDS	Formerly Used Defense Sites	U.S. Army Corps of Engineers	09/29/2020	11/17/2020	01/25/2021
US	FUELS PROGRAM	EPA Fuels Program Registered Listing	EPA	11/13/2020	11/13/2020	01/25/2021
US	FUSRAP	Formerly Utilized Sites Remedial Action Program	Department of Energy	08/08/2017	09/11/2018	09/14/2018
US	HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HIST FTTS INSP	FIFRA/TSCA Tracking System Inspection & Enforcement Case Lis	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HMIRS	Hazardous Materials Information Reporting System	U.S. Department of Transportation	12/16/2020	12/17/2020	03/12/2021
US	ICIS	Integrated Compliance Information System	Environmental Protection Agency	11/18/2016	11/23/2016	02/10/2017
US	IHS OPEN DUMPS	Open Dumps on Indian Land	Department of Health & Human Serivces, Indian	04/01/2014	08/06/2014	01/29/2015
US	INDIAN LUST R1	Leaking Underground Storage Tanks on Indian Land	EPA Region 1	10/01/2020	12/16/2020	03/12/2021
US	INDIAN LUST R10	Leaking Underground Storage Tanks on Indian Land	EPA Region 10	11/12/2020	12/16/2020	03/12/2021
US	INDIAN LUST R4	Leaking Underground Storage Tanks on Indian Land	EPA Region 4	10/02/2020	12/18/2020	03/12/2021
US	INDIAN LUST R5	Leaking Underground Storage Tanks on Indian Land	EPA, Region 5	10/07/2020	12/16/2020	03/12/2021
US	INDIAN LUST R6	Leaking Underground Storage Tanks on Indian Land	EPA Region 6	04/08/2020	05/20/2020	08/12/2020
US	INDIAN LUST R7	Leaking Underground Storage Tanks on Indian Land	EPA Region 7	09/30/2020	12/22/2020	03/12/2021
US	INDIAN LUST R8	Leaking Underground Storage Tanks on Indian Land	EPA Region 8	10/09/2020	12/16/2020	03/12/2021
US	INDIAN LUST R9	Leaking Underground Storage Tanks on Indian Land	Environmental Protection Agency	10/01/2020	12/16/2020	03/12/2021
US	INDIAN ODI	Report on the Status of Open Dumps on Indian Lands	Environmental Protection Agency	12/31/1998	12/03/2007	01/24/2008
US	INDIAN RESERV	Indian Reservations	USGS	12/31/2014	07/14/2015	01/10/2017
US	INDIAN UST R1	Underground Storage Tanks on Indian Land	EPA, Region 1	10/01/2020	12/16/2020	03/12/2021
US	INDIAN UST R10	Underground Storage Tanks on Indian Land	EPA Region 10	11/12/2020	12/16/2020	03/12/2021
US	INDIAN UST R4	Underground Storage Tanks on Indian Land	EPA Region 4	10/02/2020	12/18/2020	03/12/2021
US	INDIAN UST R5	Underground Storage Tanks on Indian Land	EPA Region 5	10/07/2020	12/16/2020	03/12/2021
US	INDIAN UST R6	Underground Storage Tanks on Indian Land	EPA Region 6	04/08/2020	05/20/2020	08/12/2020
US	INDIAN UST R7	Underground Storage Tanks on Indian Land	EPA Region 7	09/30/2020	12/22/2020	03/12/2021
US	INDIAN UST R8	Underground Storage Tanks on Indian Land	EPA Region 8	10/09/2020	12/16/2020	03/12/2021
US	INDIAN UST R9	Underground Storage Tanks on Indian Land	EPA Region 9	10/01/2020	12/16/2020	03/12/2021
US	INDIAN VCP R1	Voluntary Cleanup Priority Listing	EPA, Region 1	07/27/2015	09/29/2015	02/18/2016

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	INDIAN VCP R7	Voluntary Cleanup Priority Lisitng	EPA, Region 7	03/20/2008	04/22/2008	05/19/2008
US	LEAD SMELTER 1	Lead Smelter Sites	Environmental Protection Agency	12/30/2020	01/14/2021	02/09/2021
US	LEAD SMELTER 2	Lead Smelter Sites	American Journal of Public Health	04/05/2001	10/27/2010	12/02/2010
US	LIENS 2	CERCLA Lien Information	Environmental Protection Agency	12/30/2020	01/14/2021	02/18/2021
US	LUCIS	Land Use Control Information System	Department of the Navy	11/11/2020	11/17/2020	02/09/2021
US	MINES MRDS	Mineral Resources Data System	USGS	04/06/2018	10/21/2019	10/24/2019
US	MINES VIOLATIONS	MSHA Violation Assessment Data	DOL, Mine Safety & Health Admi	11/24/2020	11/30/2020	01/25/2021
US	MLTS	Material Licensing Tracking System	Nuclear Regulatory Commission	08/05/2020	08/10/2020	10/08/2020
US	NPL	National Priority List	EPA	12/30/2020	01/14/2021	02/09/2021
US	NPL LIENS	Federal Superfund Liens	EPA	10/15/1991	02/02/1994	03/30/1994
US	ODI	Open Dump Inventory	Environmental Protection Agency	06/30/1985	08/09/2004	09/17/2004
US	PADS	PCB Activity Database System	EPA	10/09/2019	10/11/2019	12/20/2019
US	PCB TRANSFORMER	PCB Transformer Registration Database	Environmental Protection Agency	09/13/2019	11/06/2019	02/10/2020
US	PCS	Permit Compliance System	EPA, Office of Water	07/14/2011	08/05/2011	09/29/2011
US	PCS ENF	Enforcement data	EPA	12/31/2014	02/05/2015	03/06/2015
US	PCS INACTIVE	Listing of Inactive PCS Permits	EPA	11/05/2014	01/06/2015	05/06/2015
US	PRP	Potentially Responsible Parties	EPA	12/30/2020	01/14/2021	03/05/2021
US	Proposed NPL	Proposed National Priority List Sites	EPA	12/30/2020	01/14/2021	02/09/2021
US	RAATS	RCRA Administrative Action Tracking System	EPA	04/17/1995	07/03/1995	08/07/1995
US	RADINFO	Radiation Information Database	Environmental Protection Agency	07/01/2019	07/01/2019	09/23/2019
US	RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated	Environmental Protection Agency	12/14/2020	12/17/2020	12/22/2020
US	RCRA-LQG	RCRA - Large Quantity Generators	Environmental Protection Agency	12/14/2020	12/17/2020	12/22/2020
US	RCRA-SQG	RCRA - Small Quantity Generators	Environmental Protection Agency	12/14/2020	12/17/2020	12/22/2020
US	RCRA-TSDF	RCRA - Treatment, Storage and Disposal	Environmental Protection Agency	12/14/2020	12/17/2020	12/22/2020
US	RCRA-VSQG	RCRA - Very Small Quantity Generators (Formerly Conditionall	Environmental Protection Agency	12/14/2020	12/17/2020	12/22/2020
US	RMP	Risk Management Plans	Environmental Protection Agency	11/02/2020	11/12/2020	01/25/2021
US	ROD	Records Of Decision	EPA	12/30/2020	01/14/2021	02/18/2021
US	SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing	Environmental Protection Agency	01/01/2017	02/03/2017	04/07/2017
US	SEMS	Superfund Enterprise Management System	EPA	12/30/2020	01/14/2021	02/18/2021
US	SEMS-ARCHIVE	Superfund Enterprise Management System Archive	EPA	12/30/2020	01/14/2021	02/18/2021
US	SSTS	Section 7 Tracking Systems	EPA	10/19/2020	10/19/2020	01/04/2021
US	TRIS	Toxic Chemical Release Inventory System	EPA	12/31/2018	08/14/2020	11/04/2020
US	TSCA	Toxic Substances Control Act	EPA	12/31/2016	06/17/2020	09/10/2020
US	UMTRA	Uranium Mill Tailings Sites	Department of Energy	08/30/2019	11/15/2019	01/28/2020
US	US AIRS (AFS)	Aerometric Information Retrieval System Facility Subsystem (	EPA	10/12/2016	10/26/2016	02/03/2017
US	US AIRS MINOR	Air Facility System Data	EPA	10/12/2016	10/26/2016	02/03/2017
US	US BROWNFIELDS	A Listing of Brownfields Sites	Environmental Protection Agency	12/11/2020	12/11/2020	03/02/2021
US	US CDL	Clandestine Drug Labs	Drug Enforcement Administration	12/07/2020	12/09/2020	03/02/2021
US	US ENG CONTROLS	Engineering Controls Sites List	Environmental Protection Agency	10/28/2020	11/05/2020	11/18/2020
US	US FIN ASSUR	Financial Assurance Information	Environmental Protection Agency	12/14/2020	12/17/2020	03/12/2021
US	US HIST CDL	National Clandestine Laboratory Register	Drug Enforcement Administration	12/07/2020	12/09/2020	03/02/2021
US	US INST CONTROLS	Institutional Controls Sites List	Environmental Protection Agency	10/28/2020	11/05/2020	11/18/2020
US	US MINES	Mines Master Index File	Department of Labor, Mine Safety and Health A	11/03/2020	11/23/2020	01/25/2021
US	US MINES 2	Ferrous and Nonferrous Metal Mines Database Listing	USGS	05/06/2020	05/27/2020	08/13/2020
US	US MINES 3	Active Mines & Mineral Plants Database Listing	USGS	04/14/2011	06/08/2011	09/13/2011
US	UXO	Unexploded Ordnance Sites	Department of Defense	12/31/2018	07/02/2020	09/17/2020

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
CT	CT MANIFEST	Hazardous Waste Manifest Data	Department of Energy & Environmental Protecti	08/10/2020	10/20/2020	11/02/2020
NJ	NJ MANIFEST	Manifest Information	Department of Environmental Protection	12/31/2018	04/10/2019	05/16/2019
NY	NY MANIFEST	Facility and Manifest Data	Department of Environmental Conservation	01/01/2019	04/29/2020	07/10/2020
PA	PA MANIFEST	Manifest Information	Department of Environmental Protection	06/30/2018	07/19/2019	09/10/2019
RI	RI MANIFEST	Manifest information	Department of Environmental Management	12/31/2019	02/11/2021	02/24/2021
WI	WI MANIFEST	Manifest Information	Department of Natural Resources	05/31/2018	06/19/2019	09/03/2019
US	AHA Hospitals	Sensitive Receptor: AHA Hospitals	American Hospital Association, Inc.			
US	Medical Centers	Sensitive Receptor: Medical Centers	Centers for Medicare & Medicaid Services			
US	Nursing Homes	Sensitive Receptor: Nursing Homes	National Institutes of Health			
US	Public Schools	Sensitive Receptor: Public Schools	National Center for Education Statistics			
US	Private Schools	Sensitive Receptor: Private Schools	National Center for Education Statistics			
CA	Daycare Centers	Sensitive Receptor: Licensed Facilities	Department of Social Services			
US	Flood Zones	100-year and 500-year flood zones	Emergency Management Agency (FEMA)			
US	NWI	National Wetlands Inventory	U.S. Fish and Wildlife Service			
CA	State Wetlands	Wetland Inventory	Department of Fish and Wildlife			
US	Topographic Map		U.S. Geological Survey			
US	Oil/Gas Pipelines		Endeavor Business Media			
US	Electric Power Transmission Line Data		Endeavor Business Media			

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

RIDER AND PATTERSON
RIDER AND PATTERSON
PERRIS, CA 92570

TARGET PROPERTY COORDINATES

Latitude (North):	33.828675 - 33˚ 49' 43.23''
Longitude (West):	117.255041 - 117˚ 15' 18.15''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	476399.8
UTM Y (Meters):	3742995.5
Elevation:	1561 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5641324 STEELE PEAK, CA
Version Date:	2012
East Map:	5641330 PERRIS, 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).

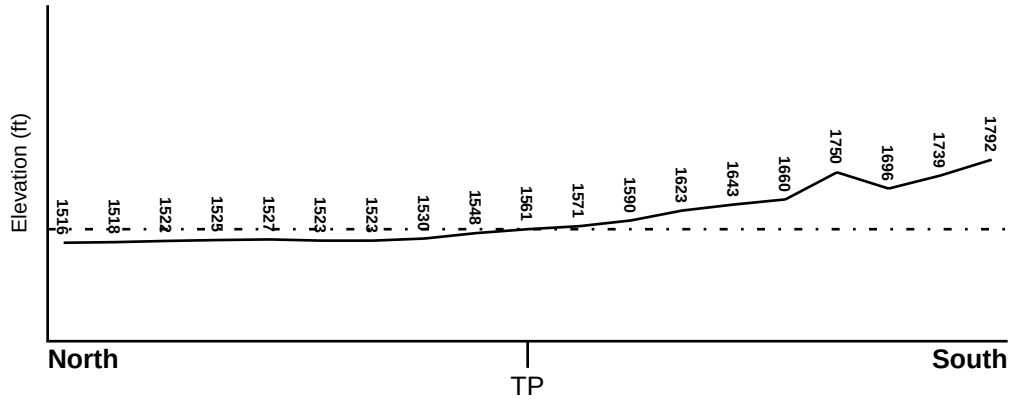
TOPOGRAPHIC INFORMATION

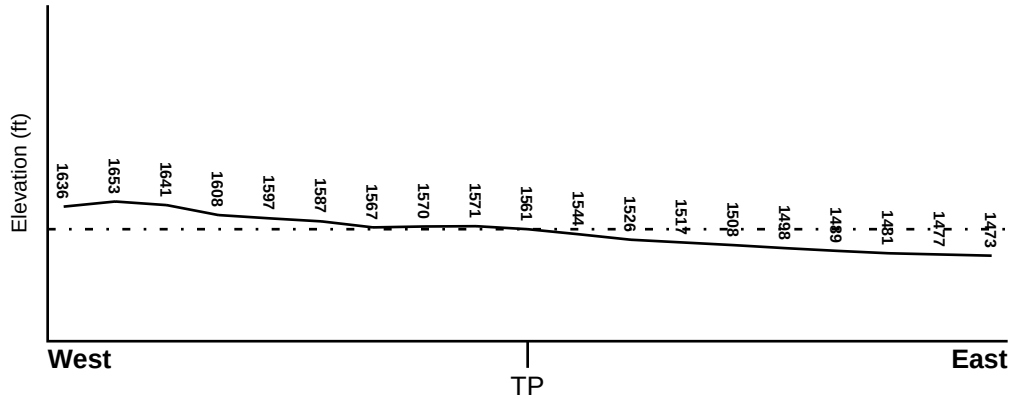
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 1561 ft.

0 1/2 1 Miles

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
06065C1410G	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06065C1430H	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
A1	1/2 - 1 Mile SSE	Not Reported
1G	1/2 - 1 Mile SSE	Not Reported

For additional site information, refer to Physical Setting Source Map Findings.

* ©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

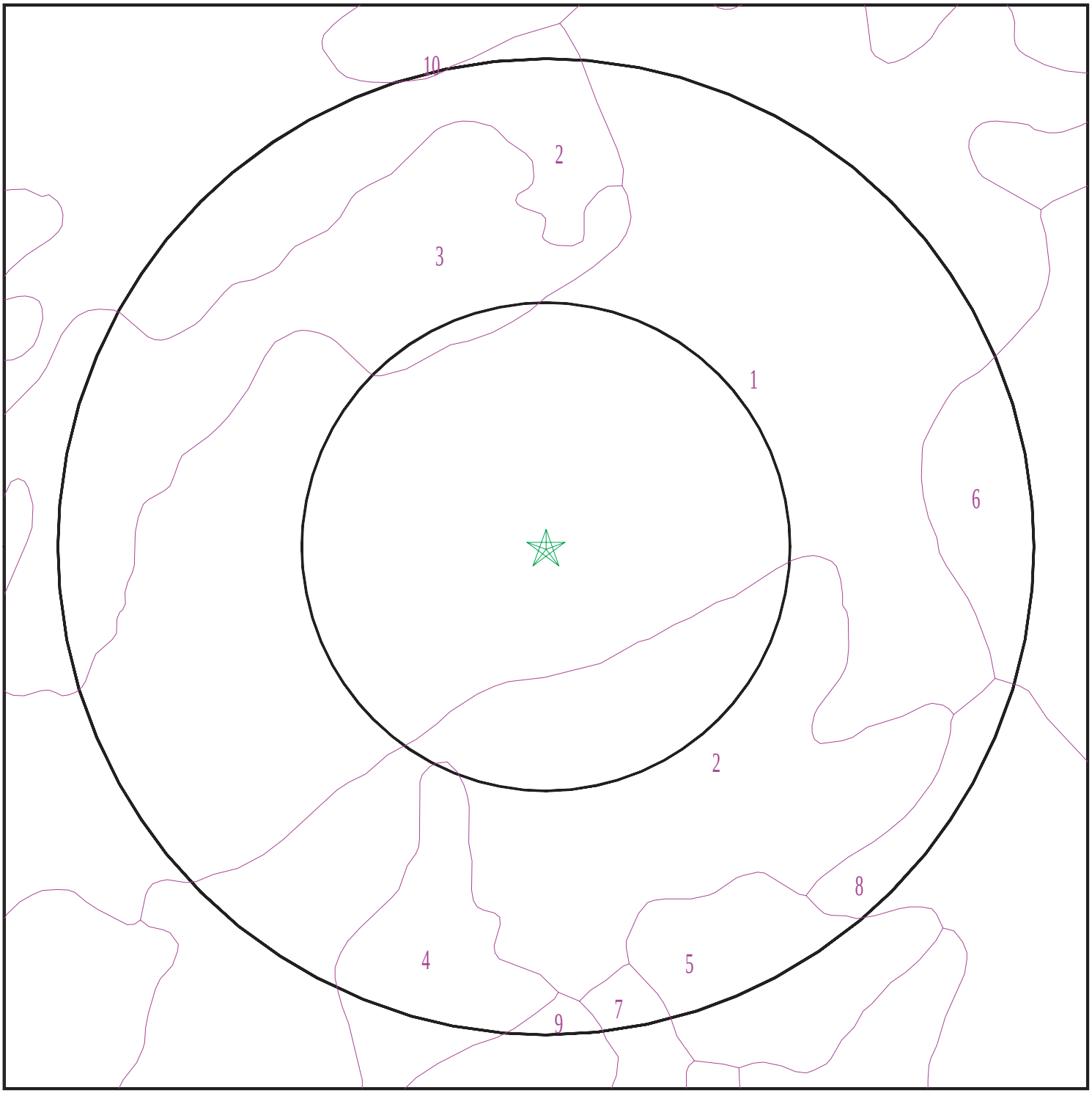
Era:	Mesozoic
System:	Cretaceous
Series:	Cretaceous granitic rocks
Code:	Kg *(decoded above as Era, System & Series)*

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 - 6407949.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Rider and Patterson	CLIENT:	Hazard Management Consulting
ADDRESS:	Rider and Patterson Perris CA 92570	CONTACT:	Troy Taylor
		INQUIRY #:	6407949.2s
LAT/LONG:	33.828675 / 117.255041	DATE:	March 17, 2021 3:12 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: 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	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

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	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: 2

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

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

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
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

Soil Map ID: 3

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

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	7 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	7 inches	16 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

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	16 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: 4

Soil Component Name: FALLBROOK

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

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	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	18 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
3	18 inches	22 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 5

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

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
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: 6

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

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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: 7

Soil Component Name: FALLBROOK

Soil Surface Texture: sandy loam

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: 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	14 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
2	14 inches	24 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
3	24 inches	27 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 8

Soil Component Name: FALLBROOK

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

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	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
2	7 inches	18 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
3	18 inches	22 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 9

Soil Component Name: GORGONIO

Soil Surface Texture: stratified gravelly loamy sand to gravelly loamy fine sand

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 excessively 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	14 inches	59 inches	stratified gravelly loamy sand to gravelly loamy fine sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 5.6
2	0 inches	14 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 5.6

Soil Map ID: 10

Soil Component Name: HANFORD

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: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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	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
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
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

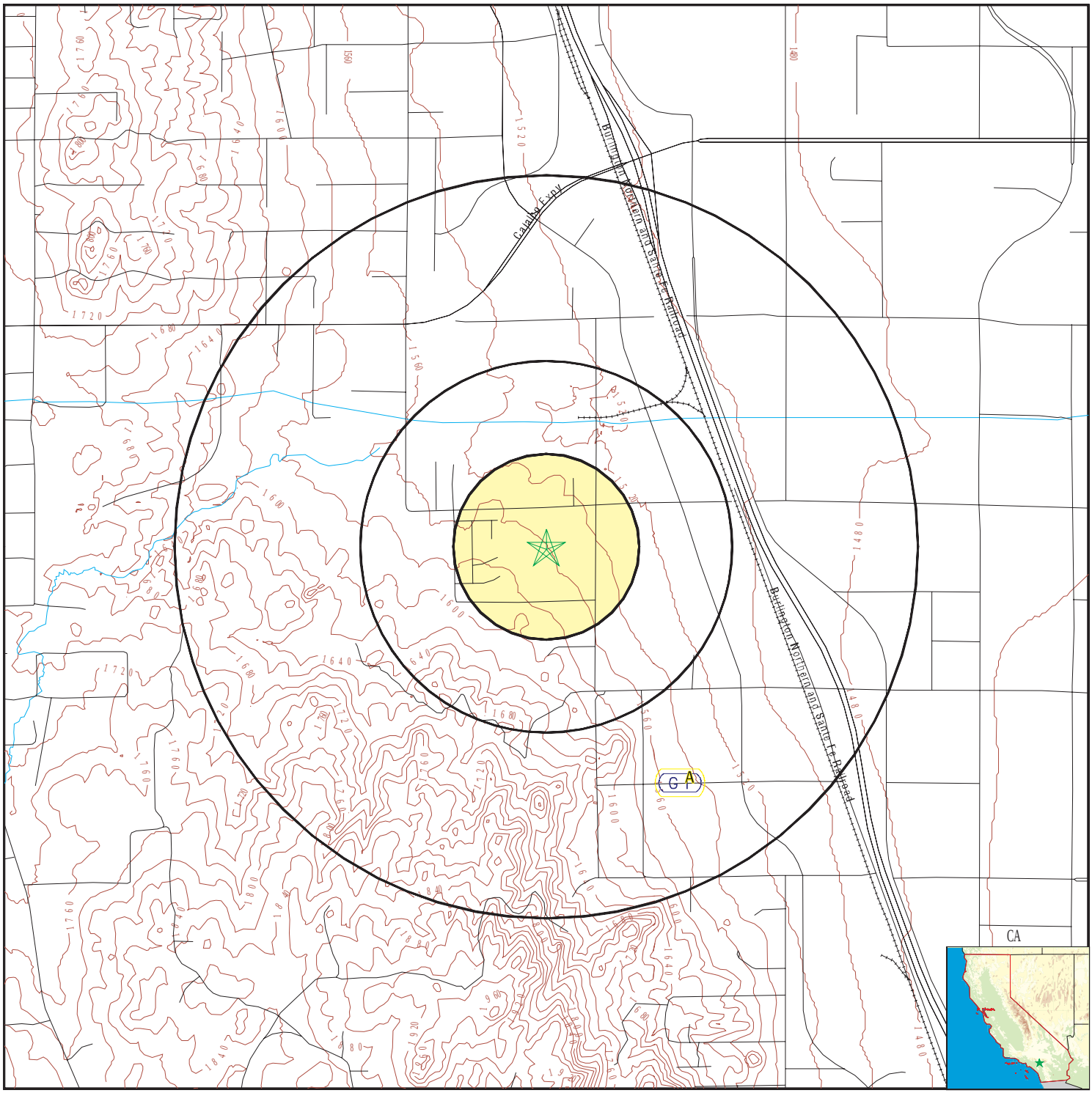
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 6407949.2s



0 1/4 1/2 1 Miles

- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- 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

N

SITE NAME:	Rider and Patterson	CLIENT:	Hazard Management Consulting
ADDRESS:	Rider and Patterson Perris CA 92570	CONTACT:	Troy Taylor
		INQUIRY #:	6407949.2s
LAT/LONG:	33.828675 / 117.255041	DATE:	March 17, 2021 3:12 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
A1 **SSE** **1/2 - 1 Mile** **Lower**	**Click here for full text details**	**AQUIFLOW**	**66414**
A2 **SSE** **1/2 - 1 Mile** **Lower**	**Click here for full text details**	**AQUIFLOW**	**37864**
1G **SSE** **1/2 - 1 Mile** **Lower**	**Click here for full text details**	**AQUIFLOW**	**66414**
2G **SSE** **1/2 - 1 Mile** **Lower**	**Click here for full text details**	**AQUIFLOW**	**37864**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92570	2	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.

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.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

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.

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
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

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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.

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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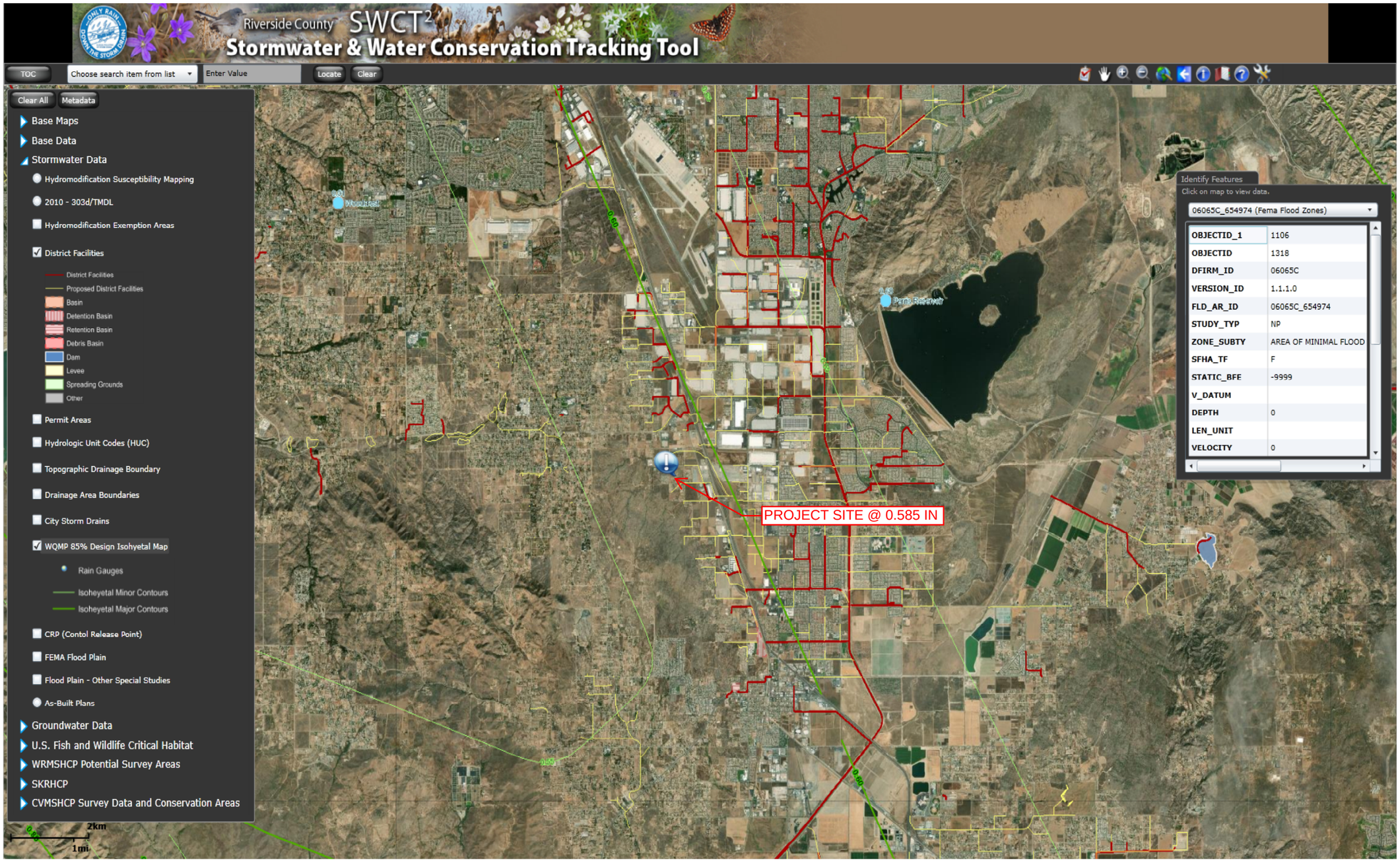
Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis (NOT APPLICABLE)

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation


Riverside County SWCT²
Stormwater & Water Conservation Tracking Tool
TOC
Choose search item from list
Enter Value
Locate
Clear
Clear All
Metadata
Base Maps
Base Data
Stormwater Data
Hydromodification Susceptibility Mapping
2010 - 303d/TMDL
Hydromodification Exemption Areas
District Facilities
District Facilities
Proposed District Facilities
Basin
Detention Basin
Retention Basin
Debris Basin
Dam
Levee
Spreading Grounds
Other
Permit Areas
Hydrologic Unit Codes (HUC)
Topographic Drainage Boundary
Drainage Area Boundaries
City Storm Drains
WQMP 85% Design Isohyetal Map
Rain Gauges
Isohyetal Minor Contours
Isohyetal Major Contours
CRP (Contol Release Point)
FEMA Flood Plain
Flood Plain - Other Special Studies
As-Built Plans
Groundwater Data
U.S. Fish and Wildlife Critical Habitat
WRMSHCP Potential Survey Areas
SKRHCP
CVMSHCP Survey Data and Conservation Areas
Identify Features
Click on map to view data.
06065C_654974 (Fema Flood Zones)
OBJECTID_1 1106
OBJECTID 1318
DFIRM_ID 06065C
VERSION_ID 1.1.1.0
FLD_AR_ID 06065C_654974
STUDY_TYP NP
ZONE_SUBTY AREA OF MINIMAL FLOOD
SFHA_TF F
STATIC_BFE -9999
V_DATUM
DEPTH 0
LEN_UNIT
VELOCITY 0
PROJECT SITE @ 0.585 IN
2km
1mi

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	Thienes Engineering, Inc.	Date	6/30/2022
Designed by	Luis Prado	Case No	PPT220004
Company Project Number/Name	Rider Street Capstone Logistics (JN3958)		

BMP Identification

BMP NAME / ID: Bioretention / BIO "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}= 0.585 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)*
A-1	*652528.8*	*Roofs*	*1.0*	*0.89*	*582055.7*			
A-2	*180338.4*	*Ornamental Landscaping*	*0.1*	*0.11*	*19919.8*			
D	*3920.4*	*Ornamental Landscaping*	*0.1*	*0.11*	*433*			
E	*13068*	*Ornamental Landscaping*	*0.1*	*0.11*	*1443.5*			
G	*57499.2*	*Ornamental Landscaping*	*0.1*	*0.11*	*6351.2*			
ST	*284011.2*	*Concrete or Asphalt*	*1.0*	*0.89*	*253338*			
	1191366	***Total***			**863541.2**	**0.59**	***42097.6***	***55675***

Notes:
Onsite tributary area (A-1 and A-2) = 19.12 acres (4.14 acres of pervious area and 14.98 acres of impervious area)
Onsite landscape to street (D and E) = 0.39 acres
Offsite run-on tributary area (G) = 1.32 acres
Street improvements (ST) = 6.52 acres
Total tributary area = 27.35 acres

Bioretention Facility - Design Procedure	BMP ID BIO "A"	Legend:	Required Entries / Calculated Cells
Company Name:	Thienes Engineering, Inc	Date:	18-Jul
Designed by:	Luis Prado	County/City Case No.:	

Design Volume

Enter the area tributary to this feature	A_T=	27.35	acres
Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	42,098	ft^3

Type of Bioretention Facility Design

- (●) Side slopes required (parallel to parking spaces or adjacent to walkways)
- ( ) No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer	d_S =	3.0	ft
Top Width of Bioretention Facility, excluding curb	w_T =	10.0	ft
Total Effective Depth, d_E $d_E = (0.3) \times d_S + (0.4) \times 1 - (0.7/w_T) + 0.5$	d_E =	1.73	ft
Minimum Surface Area, A_m $A_M\ (ft^2) = \frac{V_{BMP}\ (ft^3)}{d_E\ (ft)}$	A_M =	24,335	ft^2
Proposed Surface Area	A=	32,182	ft^2

Bioretention Facility Properties

Side Slopes in Bioretention Facility	z =	4	:1
Diameter of Underdrain		6	inches
Longitudinal Slope of Site (3% maximum)		0.5	%
6" Check Dam Spacing		0	feet
Describe Vegetation:		Shrubs	

Notes: Volume Provided = Proposed Surface Area x Effective Depth = 32,182 SF x 1.73 FT = 55,675 CF

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	Thienes Engineering, Inc.	Date	6/30/2022
Designed by	Luis Prado	Case No	PPT220004
Company Project Number/Name	Rider Street Capstone Logistics (JN3958)		

BMP Identification

BMP NAME / ID: 144" PERFORATED CMP / CMP "B"

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}= 0.585 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)
B-1	488307.6	Roofs	1.0	0.89	435570.4			
B-2	16988.4	Ornamental Landscaping	0.1	0.11	1876.5			
F	65775.6	Ornamental Landscaping	0.1	0.11	7265.4			
	571071.6	Total			444712.3	0.59	21679.7	22310

Notes:

Onsite tributary area (B-1 and B-2) = 11.60 acres (0.39 acres of pervious area and 11.21 acres of impervious area)

Offsite run-on tributary area (F) = 1.51 acres

Total tributary area = 13.11 acres

CMP "B"

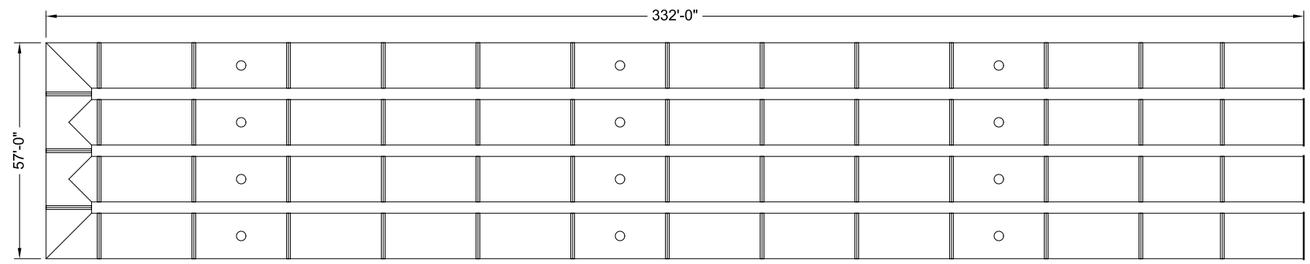
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 1,337 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = 192,700 CF
- PIPE STORAGE VOLUME = 151,211 CF
- BACKFILL STORAGE VOLUME = 41,718 CF
- TOTAL STORAGE PROVIDED = 193,601 CF

PIPE DETAILS
- DIAMETER = 144"
- CORRUGATION = 5x1
- GAGE = 14
- COATING = POLYMER-COATED
- WALL TYPE = PERFORATED
- BARREL SPACING = 36"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 6"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 6"



NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}$" x $\frac{1}{2}$" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY
SCALE: 1" = 40'

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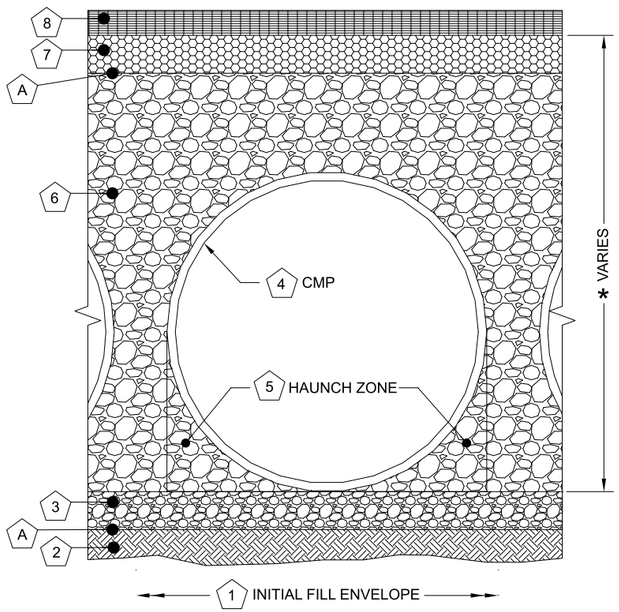
CONTECH® CMP DETENTION SYSTEMS

CONTECH
DYODS
DRAWING

DYO18599 TEI 3958
TEI 3958 (South) - 144" PERFORATED CMP
Perris, CA
DETENTION SYSTEM

PROJECT No.: 7490	SEQ. No.: 18599	DATE: 7/18/2022
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		



	Infiltration Systems - CMP Infiltration & CMP Perforated Drainage Pipe			
	Material Location	Description	Material Designation	Designation
8	Rigid or Flexible Pavement (if applicable)			
7	Road Base (if applicable			
A	Geotextile Layer	Non-Woven Geotextile	CONTECH C-40 or C-45	Engineer Decision for consideration to prevent soil migration into varying soil types. Wrap the trench only.
6	Backfill	Infiltration pipe systems have a pipe perforation sized of 3/8" diameter. An open graded, free draining stone, with a particle size of ½" – 2 ½" diameter is recommended.	AASHTO M 145-A-1 or AASHTO M 43 - 3, 4	Material shall be worked into the pipe haunches by means of shovel-slicing, rodding, air-tamper, vibratory rod, or other effective methods. Compaction of all placed fill material is necessary and shall be considered adequate when no further yielding of the material is observed under the compactor, or under foot, and the Project Engineer or his representative is satisfied with the level of compaction"
3	Bedding Stone	Well graded granular bedding material w/maximum particle size of 3"	AASHTO M43 - 3,357,4,467, 5, 56, 57	For soil aggregates larger than 3/8" a dedicated bedding layer is not required for CMP. Pipe may be placed on the trench bottom comprised of native suitable well graded & granular material. For Arch pipes it is recommended to be shaped to a relatively flat bottom or fine-grade the foundation to a slight v-shape. Soil aggregates less than 3/8" and unsuitable material should be over-excavated and re-placed with a 4"-6" layer of well graded & granular stone per the material designation.
A	Geotextile Layer	None	None	Contech does not recommend geotextiles be placed under the invert of Infilitration systems due to the propensity for geotextiles to clog over time.
*	Note: The listed AASHTO designations are for gradation only. The stone must also be angular and clean.			

1 MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT.

FOUNDATION/BEDDING PREPARATION

2 PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER.

5 HAUNCH ZONE MATERIAL SHALL BE PLACED AND UNIFORMLY COMPACTED WITHOUT SOFT SPOTS.

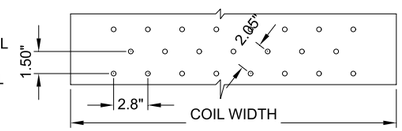
BACKFILL

MATERIAL SHALL BE PLACED IN 8"-10" MAXIMUM LIFTS. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT DIFFERENTIAL BETWEEN THE SIDES OF ANY PIPE IN THE SYSTEM AT ALL TIMES DURING THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE PIPE. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT. MAINTAIN BALANCED LOADING ON ALL PIPES IN THE SYSTEM DURING ALL SUCH OPERATIONS.

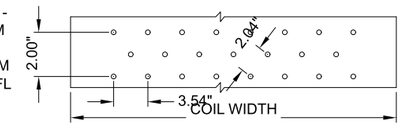
OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS. REFER TO TYPICAL BACKFILL DETAIL FOR MATERIAL REQUIRED.

2 2/3" x 1/2" CORRUGATION - STEEL AND ALUMINUM CMP EDGE SPACING EQUAL ON BOTH SIDES



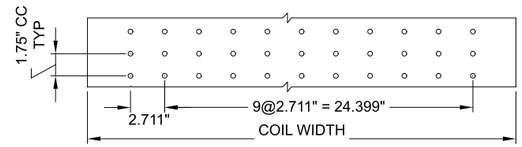
OPEN AREA = 3.76 SQ IN/SQ FT

3" x 1" CORRUGATION - STEEL AND ALUMINUM CMP (COIL PROVIDED FROM CONTECH LANTANA, FL PLANT)



OPEN AREA = 4.16 SQ IN/SQ FT

5" x 1" CORRUGATION - STEEL ONLY
EDGE SPACING EQUAL ON BOTH SIDES



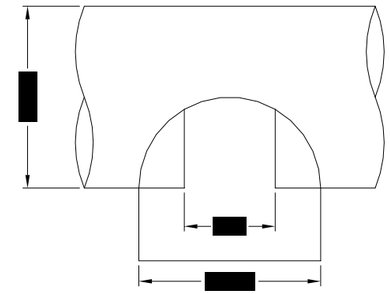
OPEN AREA = 3.33 SQ IN/SQ FT

NOTES:

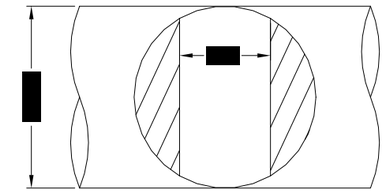
1. PERFORATIONS MEET AASHTO AND ASTM SPECIFICATIONS.
2. PERFORATION OPEN AREA PER SQUARE FOOT OF PIPE IS BASED ON THE NOMINAL DIAMETER AND LENGTH OF PIPE.
3. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
4. ALL HOLES ⌀3/8".

TYPICAL PERFORATION DETAIL

SCALE: N.T.S.



PLAN

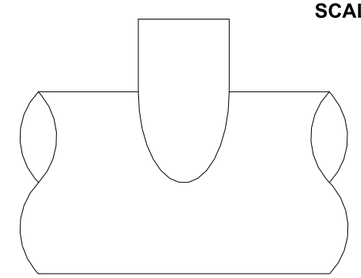


FRONT

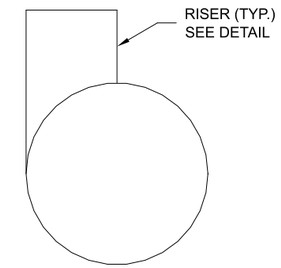
NOTE:
MANWAY DETAIL APPLICABLE FOR CMP SYSTEMS WITH DIAMETERS 48" AND LARGER. MANWAYS MAY BE REQUIRED ON SMALLER SYSTEMS DEPENDING ON ACTUAL SITE SPECIFIC CONDITIONS.

TYPICAL MANWAY DETAIL

SCALE: N.T.S.



ELEVATION

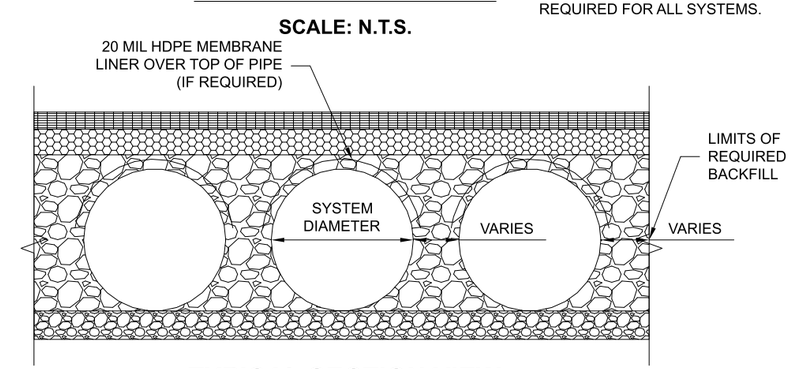


END

NOTE:
LADDERS ARE OPTIONAL AND ARE NOT REQUIRED FOR ALL SYSTEMS.

TYPICAL RISER DETAIL

SCALE: N.T.S.



TYPICAL SECTION VIEW

LINER OVER ROWS
SCALE: N.T.S.

NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, AN HDPE MEMBRANE LINER IS RECOMMENDED WITH THE SYSTEM. THE IMPERMEABLE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

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CONTECH DYODS DRAWING

DYO18599 TEI 3958
TEI 3958 (South) - 144" PERFORATED CMP
Perris, CA
DETENTION SYSTEM

PROJECT No.: 7490	SEQ. No.: 18599	DATE: 7/18/2022
DESIGNED: DYO	DRAWN: DYO	
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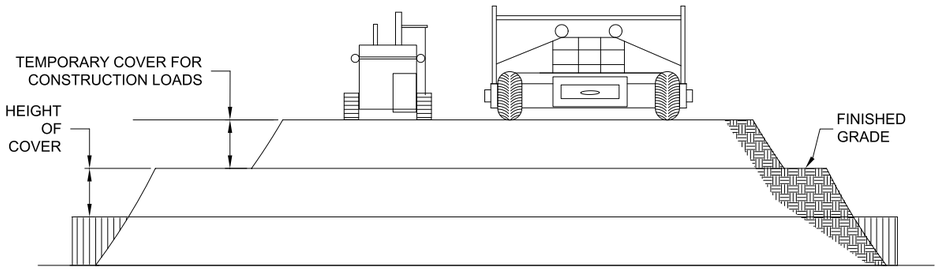
SHEET NO.: 1		



CONSTRUCTION LOADS

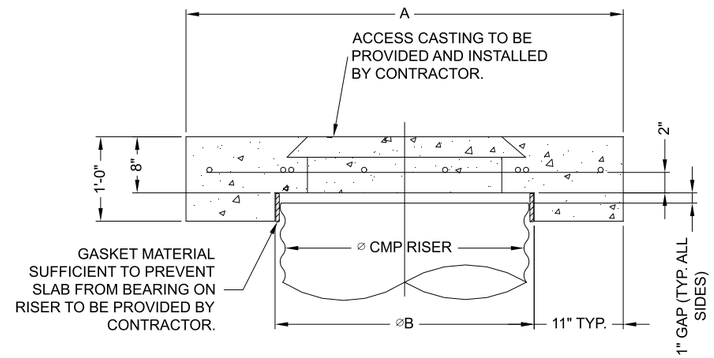
FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM

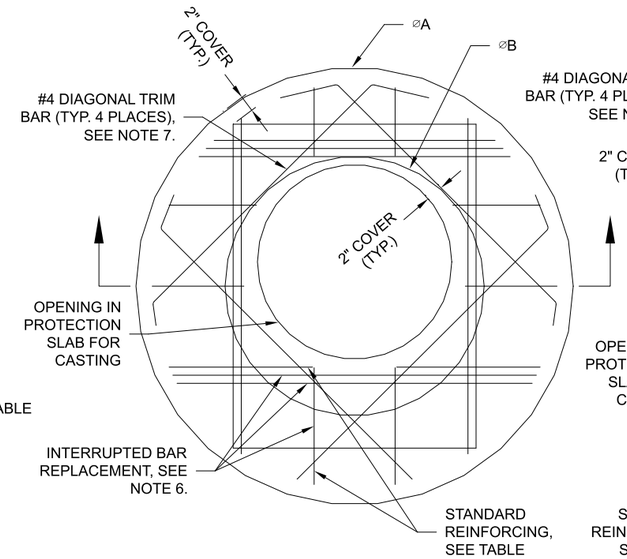
SCALE: N.T.S.



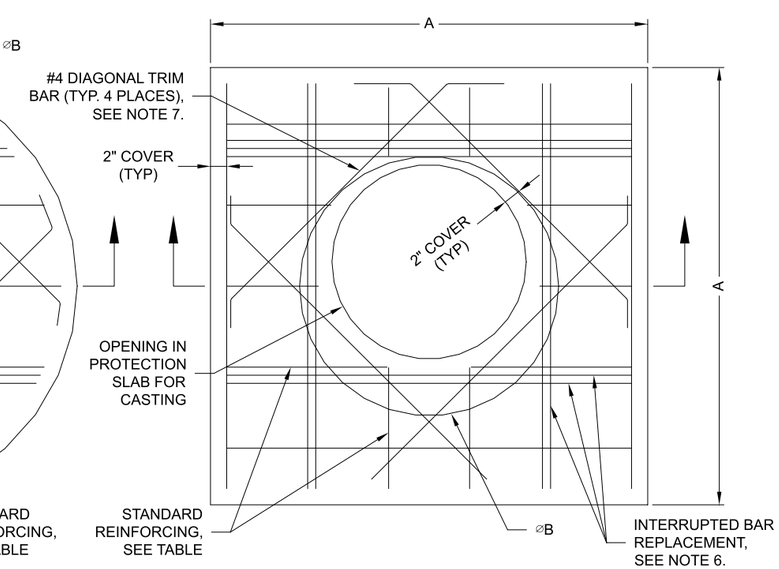
SECTION VIEW

REINFORCING TABLE				
⌀ CMP RISER	A	⌀ B	REINFORCING	**BEARING PRESSURE (PSF)
24"	⌀ 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	⌀ 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	⌀ 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	⌀ 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	⌀ 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

POLYMER COATED: AASHTO M-245 OR ASTM A-762

ALUMINUM: AASHTO M-196 OR ASTM B-745

HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSP'S (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.

INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL

SCALE: N.T.S.

NOTE:
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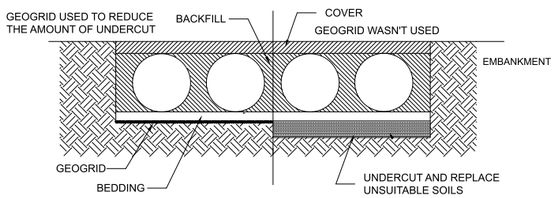
CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.

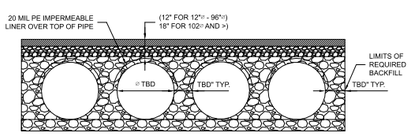


GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

GEOMEMBRANE BARRIER

A SITE'S RESISTIVITY MAY CHANGE OVER TIME WHEN VARIOUS TYPES OF SALTING AGENTS ARE USED, SUCH AS ROAD SALTS FOR DEICING AGENTS. IF SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM THE USE OF SUCH AGENTS INCLUDING PREMATURE CORROSION AND REDUCED ACTUAL SERVICE LIFE.

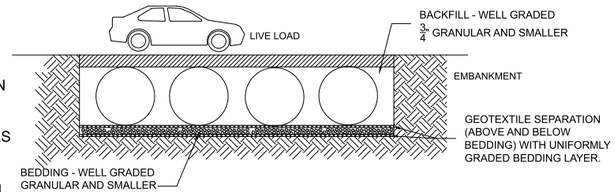
THE PROJECT'S ENGINEER OF RECORD IS TO EVALUATE WHETHER SALTING AGENTS WILL BE USED ON OR NEAR THE PROJECT SITE, AND USE HIS/HER BEST JUDGEMENT TO DETERMINE IF ANY ADDITIONAL PROTECTIVE MEASURES ARE REQUIRED. BELOW IS A TYPICAL DETAIL SHOWING THE PLACEMENT OF A GEOMEMBRANE BARRIER FOR PROJECTS WHERE SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE.



IN-SITU TRENCH WALL

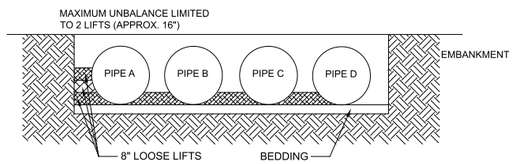
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT. PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



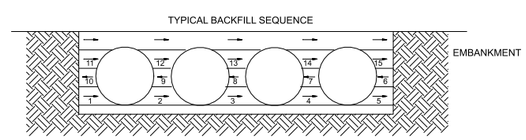
BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.

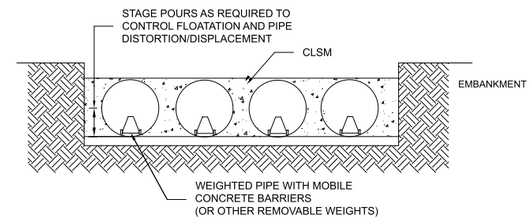


IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE, AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10-FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.



WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CLSM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.

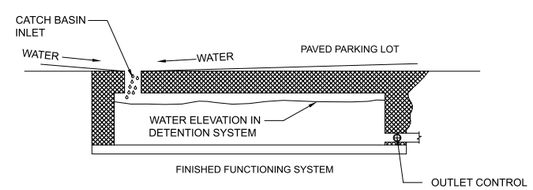


CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION; POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/ CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTING/DE-ICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

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DATE	REVISION DESCRIPTION	BY

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800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH® CMP DETENTION SYSTEMS

CONTECH **DYODS** DRAWING

DYO18599 TEI 3958
TEI 3958 (South) - 144" PERFORATED CMP
Perris, CA
DETENTION SYSTEM

PROJECT No.: 7490	SEQ. No.: 18599	DATE: 7/18/2022
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

Date: 7/18/2022
Project Name: TEI 3958 (South) - 144 PERFORATED CMP - 18599 (7-18-

City / County:
State:

Designed By:
Company:
Telephone:

CMP: Underground Detention System
Storage Volume Estimation

=Adjustable Input Cells

Contech Engineered Solutions, LLC is pleased to offer the following estimate of storage volume for the above named project. The results are submitted as an estimate only, without liability on the part of Contech Engineered Solutions, LLC for accuracy or suitability to any particular applicaton and are subject to verification of the Engineer of Record. **This tool is only applicable for rectangular shaped systems.**

Summary of Inputs

System Information		Backfill Information		Pipe & Analysis Information	
Out-to-out length (ft):	332.0	Backfill Porosity (%):	40%	System Diameter (in):	144
Out-to-out width (ft):	57.0	Depth Above Pipe (in):	6.0	Pipe Spacing (in):	36
Number of Manifolds (ea):	1.0	Depth Below Pipe (in):	6.0	Incremental Analysis (in):	2
Number of Barrels (ea):	4.0	Width At Ends (ft):	1.0	System Invert (Elevation):	0
		Width At Sides (ft):	1.0		

Storage Volume Estimation

System		Pipe		Stone		Total System		Miscellaneous		
Depth (ft)	Elevation (ft)	Incremental Storage (cf)	Cumulative Storage (cf)	Incremental Storage (cf)	Cumulative Storage (cf)	Incremental Storage (cf)	Cumulative Storage (cf)	Percent Open Storage (%)	Ave. Surface Area (sf)	
0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	7,882.4	
0.17	0.16	0.0	0.0	1,313.7	1,313.7	1,313.7	1,313.7	0.0%	7,882.4	
0.33	0.33	0.0	0.0	1,313.7	2,627.5	1,313.7	2,627.5	0.0%	7,882.4	
0.50	0.50	0.0	0.0	1,313.7	3,941.2	1,313.7	3,941.2	0.0%	7,882.4	
0.67	0.66	418.4	418.4	1,146.4	5,087.6	1,564.8	5,506.0	7.6%	10,135.6	
0.83	0.83	760.1	1,178.5	1,009.7	6,097.3	1,769.8	7,275.8	16.2%	11,046.3	
1.00	1.00	977.3	2,155.8	922.8	7,020.1	1,900.1	9,175.9	23.5%	11,729.6	
1.17	1.16	1,149.0	3,304.8	854.1	7,874.2	2,003.1	11,179.0	29.6%	12,292.5	
1.33	1.33	1,293.8	4,598.6	796.2	8,670.4	2,090.0	13,269.0	34.7%	12,776.6	
1.50	1.50	1,420.0	6,018.6	745.8	9,416.2	2,165.7	15,434.7	39.0%	13,203.6	
1.67	1.66	1,532.2	7,550.7	700.9	10,117.0	2,233.0	17,667.8	42.7%	13,586.2	
1.83	1.83	1,633.3	9,184.1	660.4	10,777.4	2,293.7	19,961.5	46.0%	13,933.0	
2.00	2.00	1,725.3	10,909.4	623.6	11,401.0	2,348.9	22,310.4	48.9%	14,249.7	DCV met h
2.17	2.16	1,809.6	12,719.0	589.9	11,990.9	2,399.5	24,710.0	51.5%	14,540.6	
2.33	2.33	1,887.3	14,606.3	558.8	12,549.7	2,446.1	27,156.1	53.8%	14,809.0	
2.50	2.50	1,959.0	16,565.3	530.1	13,079.9	2,489.1	29,645.2	55.9%	15,057.5	
2.67	2.66	2,025.5	18,590.8	503.5	13,583.4	2,529.0	32,174.2	57.8%	15,288.0	
2.83	2.83	2,087.2	20,678.0	478.8	14,062.3	2,566.1	34,740.3	59.5%	15,502.1	
3.00	3.00	2,144.6	22,822.6	455.9	14,518.2	2,600.5	37,340.8	61.1%	15,701.3	
3.17	3.16	2,198.0	25,020.6	434.6	14,952.7	2,632.5	39,973.3	62.6%	15,886.6	
3.33	3.33	2,247.6	27,268.2	414.7	15,367.4	2,662.3	42,635.6	64.0%	16,058.9	
3.50	3.50	2,293.8	29,561.9	396.2	15,763.6	2,690.0	45,325.6	65.2%	16,219.1	
3.67	3.66	2,336.7	31,898.6	379.1	16,142.7	2,715.7	48,041.3	66.4%	16,367.9	
3.83	3.83	2,376.5	34,275.1	363.1	16,505.8	2,739.6	50,780.9	67.5%	16,505.8	
4.00	4.00	2,413.3	36,688.4	348.4	16,854.2	2,761.7	53,542.7	68.5%	16,633.4	
4.17	4.16	2,447.4	39,135.8	334.8	17,189.0	2,782.2	56,324.8	69.5%	16,751.1	
4.33	4.33	2,478.8	41,614.6	322.2	17,511.2	2,801.0	59,125.8	70.4%	16,859.2	
4.50	4.50	2,507.5	44,122.1	310.7	17,822.0	2,818.2	61,944.1	71.2%	16,958.3	
4.67	4.66	2,533.8	46,655.9	300.2	18,122.2	2,834.0	64,778.1	72.0%	17,048.4	
4.83	4.83	2,557.6	49,213.5	290.7	18,412.9	2,848.3	67,626.4	72.8%	17,130.0	
5.00	5.00	2,579.1	51,792.7	282.1	18,694.9	2,861.2	70,487.6	73.5%	17,203.1	
5.17	5.16	2,598.3	54,391.0	274.4	18,969.3	2,872.7	73,360.3	74.1%	17,268.1	
5.33	5.33	2,615.2	57,006.2	267.6	19,237.0	2,882.9	76,243.2	74.8%	17,325.1	
5.50	5.50	2,630.0	59,636.2	261.7	19,498.7	2,891.7	79,134.9	75.4%	17,374.2	
5.67	5.66	2,642.5	62,278.7	256.7	19,755.5	2,899.2	82,034.1	75.9%	17,415.5	
5.83	5.83	2,652.9	64,931.6	252.6	20,008.0	2,905.5	84,939.6	76.4%	17,449.2	
6.00	6.00	2,661.2	67,592.9	249.2	20,257.3	2,910.5	87,850.1	76.9%	17,475.3	

These results are submitted to you as a guideline only, without liability on the part of CONTECH Engineered Solutions, LLC for accuracy or suitability to any particular application, and are subject to your verification.

6.17	6.16	2,667.5	70,260.3	246.8	20,504.0	2,914.2	90,764.3	77.4%	17,493.9
6.33	6.33	2,671.6	72,931.9	245.1	20,749.1	2,916.7	93,681.0	77.9%	17,505.1
6.50	6.50	2,673.7	75,605.6	244.3	20,993.4	2,917.9	96,598.9	78.3%	17,508.8
6.67	6.66	2,673.7	78,279.2	244.3	21,237.6	2,917.9	99,516.9	78.7%	17,505.1
6.83	6.83	2,671.6	80,950.8	245.1	21,482.7	2,916.7	102,433.6	79.0%	17,493.9
7.00	7.00	2,667.5	83,618.3	246.8	21,729.5	2,914.2	105,347.8	79.4%	17,475.3
7.17	7.16	2,661.2	86,279.5	249.2	21,978.7	2,910.5	108,258.2	79.7%	17,449.2
7.33	7.33	2,652.9	88,932.5	252.6	22,231.3	2,905.5	111,163.7	80.0%	17,415.5
7.50	7.50	2,642.5	91,575.0	256.7	22,488.0	2,899.2	114,063.0	80.3%	17,374.2
7.67	7.66	2,630.0	94,204.9	261.7	22,749.8	2,891.7	116,954.7	80.5%	17,325.1
7.83	7.83	2,615.2	96,820.2	267.6	23,017.4	2,882.9	119,837.6	80.8%	17,268.1
8.00	8.00	2,598.3	99,418.5	274.4	23,291.8	2,872.7	122,710.3	81.0%	17,203.1
8.17	8.16	2,579.1	101,997.6	282.1	23,573.9	2,861.2	125,571.5	81.2%	17,130.0
8.33	8.33	2,557.6	104,555.2	290.7	23,864.6	2,848.3	128,419.8	81.4%	17,048.4
8.50	8.50	2,533.8	107,089.0	300.2	24,164.8	2,834.0	131,253.8	81.6%	16,958.3
8.67	8.66	2,507.5	109,596.6	310.7	24,475.5	2,818.2	134,072.1	81.7%	16,859.2
8.83	8.83	2,478.8	112,075.3	322.2	24,797.7	2,801.0	136,873.1	81.9%	16,751.1
9.00	9.00	2,447.4	114,522.7	334.8	25,132.5	2,782.2	139,655.2	82.0%	16,633.4
9.17	9.16	2,413.3	116,936.0	348.4	25,480.9	2,761.7	142,417.0	82.1%	16,505.8
9.33	9.33	2,376.5	119,312.5	363.1	25,844.1	2,739.6	145,156.6	82.2%	16,367.9
9.50	9.50	2,336.7	121,649.2	379.1	26,223.1	2,715.7	147,872.3	82.3%	16,219.1
9.67	9.66	2,293.8	123,943.0	396.2	26,619.3	2,690.0	150,562.3	82.3%	16,058.9
9.83	9.83	2,247.6	126,190.6	414.7	27,034.0	2,662.3	153,224.6	82.4%	15,886.6
10.00	10.00	2,198.0	128,388.5	434.6	27,468.6	2,632.5	155,857.1	82.4%	15,701.3
10.17	10.16	2,144.6	130,533.1	455.9	27,924.5	2,600.5	158,457.6	82.4%	15,502.1
10.33	10.33	2,087.2	132,620.3	478.8	28,403.3	2,566.1	161,023.7	82.4%	15,288.0
10.50	10.50	2,025.5	134,645.8	503.5	28,906.9	2,529.0	163,552.7	82.3%	15,057.5
10.67	10.66	1,959.0	136,604.8	530.1	29,437.0	2,489.1	166,041.8	82.3%	14,809.0
10.83	10.83	1,887.3	138,492.1	558.8	29,995.8	2,446.1	168,487.9	82.2%	14,540.6
11.00	11.00	1,809.6	140,301.7	589.9	30,585.7	2,399.5	170,887.4	82.1%	14,249.7
11.17	11.16	1,725.3	142,027.1	623.6	31,209.3	2,348.9	173,236.4	82.0%	13,933.0
11.33	11.33	1,633.3	143,660.4	660.4	31,869.7	2,293.7	175,530.1	81.8%	13,586.2
11.50	11.50	1,532.2	145,192.6	700.9	32,570.6	2,233.0	177,763.1	81.7%	13,203.6
11.67	11.66	1,420.0	146,612.5	745.8	33,316.3	2,165.7	179,928.8	81.5%	12,776.6
11.83	11.83	1,293.8	147,906.3	796.2	34,112.5	2,090.0	182,018.8	81.3%	12,292.5
12.00	12.00	1,149.0	149,055.3	854.1	34,966.7	2,003.1	184,022.0	81.0%	11,729.6
12.17	12.16	977.3	150,032.6	922.8	35,889.5	1,900.1	185,922.1	80.7%	11,046.3
12.33	12.33	760.1	150,792.7	1,009.7	36,899.2	1,769.8	187,691.9	80.3%	10,135.6
12.50	12.50	418.4	151,211.1	1,146.4	38,045.5	1,564.8	189,256.7	79.9%	7,882.4
12.67	12.66	0.0	151,211.1	1,313.7	39,359.3	1,313.7	190,570.4	79.3%	7,882.4
12.83	12.83	0.0	151,211.1	1,313.7	40,673.0	1,313.7	191,884.1	78.8%	7,882.4
13.00	13.00	0.0	151,211.1	1,313.7	41,986.7	1,313.7	193,197.9	78.3%	7,882.4

These results are submitted to you as a guideline only, without liability on the part of CONTECH Engineered Solutions, LLC for accuracy or suitability to any particular application, and are subject to your verification.

Infiltration Basin - Design Procedure (Rev. 03-2012)	BMP ID	Legend:	Required Entries / Calculated Cells

Company Name:	Thienes Engineering, Inc.	Date:	19-Jul
Designed by:	Luis Prado	County/City Case No.:	

Design Volume

a) Tributary area (BMP subarea)	A_T =	13.11	acres
b) Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	21,680	ft^3

Maximum Depth

a) Infiltration rate	I =	6.1	in/hr
b) Factor of Safety (See Table 1, Appendix A: "Infiltration Testing" from this BMP Handbook)	FS =	3	
c) Calculate D_1 $D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times FS}$	D_1 =	12.2	ft
d) Enter the depth of freeboard (at least 1 ft)		1	ft
e) Enter depth to historic high ground water (measured from **top** of basin)		30	ft
f) Enter depth to top of bedrock or impermeable layer (measured from **top** of basin)		30	ft
g) D_2 is the smaller of: Depth to groundwater - (10 ft + freeboard) and Depth to impermeable layer - (5 ft + freeboard)	D_2 =	19.0	ft
h) D_{MAX} is the smaller value of D_1 and D_2 but shall not exceed 5 feet	D_{MAX} =	12.2	ft

Basin Geometry

a) Basin side slopes (no steeper than 4:1)	z =	n/a	:1
b) Proposed basin depth (excluding freeboard)	d_B =	1.7	ft
c) Minimum bottom surface area of basin ($A_S = V_{BMP}/d_B$)	A_S =	12753	ft^2
d) Proposed Design Surface Area	A_D =	19706	ft^2

Forebay

a) Forebay volume (minimum 0.5% V_{BMP})	Volume =	108	ft^3
b) Forebay depth (height of berm/splashwall. 1 foot min.)	Depth =	n/a	ft
c) Forebay surface area (minimum)	Area =	#######	ft^2
d) Full height notch-type weir	Width (W) =	n/a	in

Notes: Ponding Depth = 1.7 feet = (0.5' x 0.40) + 1.5' (perf cmp)

Santa Ana Watershed - BMP Design Flow Rate, Q_{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	Thienes Engineering, Inc.	Date	7/19/2022
Designed by	Luis Prado	Case No	PPT220004
Company Project Number/Name	Rider Street Capstone Logistics (JN3958)		

BMP Identification

BMP NAME / ID: CDS #1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity: I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMAs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	Design Rainfall Intensity (in/hr)	Design Flow Rate (cfs)	Proposed Flow Rate (cfs)
CDS #1	52707.6	Roofs	1.0	0.89	47015.2			
	52707.6		Total		47015.2	0.20	0.2	0.5

Notes:
Tributary area = 1.30 ac
Q100 = 2.0 cfs

Use CDS1515-3
Bypass Flowrate Capacity = 6.0 cfs

Santa Ana Watershed - BMP Design Flow Rate, Q_{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: Thienes Engineering, Inc. | Date: 7/19/2022

Designed by: Luis Prado | Case No: PPT220004

Company Project Number/Name: Rider Street Capstone Logistics (JN3958)

BMP Identification

BMP NAME / ID: CDS #2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity I = 0.20 in/hr

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 (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
DMAs	*CDS #2*	*563666.4*	*Roofs*	*1.0*	*0.89*	*502790.4*			
		563666.4	***Total***			**502790.4**	**0.20**	**2.3**	**2.5**

Notes:

Tributary area = 12.94 ac

Q100 = 19.9 cfs

Use CDS3025-6

Bypass Flowrate Capacity = 20 cfs

Santa Ana Watershed - BMP Design Flow Rate, Q_{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: Thienes Engineering, Inc. Date: 7/19/2022

Designed by: Luis Prado Case No: PPT220004

Company Project Number/Name: Rider Street Capstone Logistics (JN3958)

BMP Identification

BMP NAME / ID: CDS #3

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Design Rainfall Intensity I = 0.20 in/hr

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

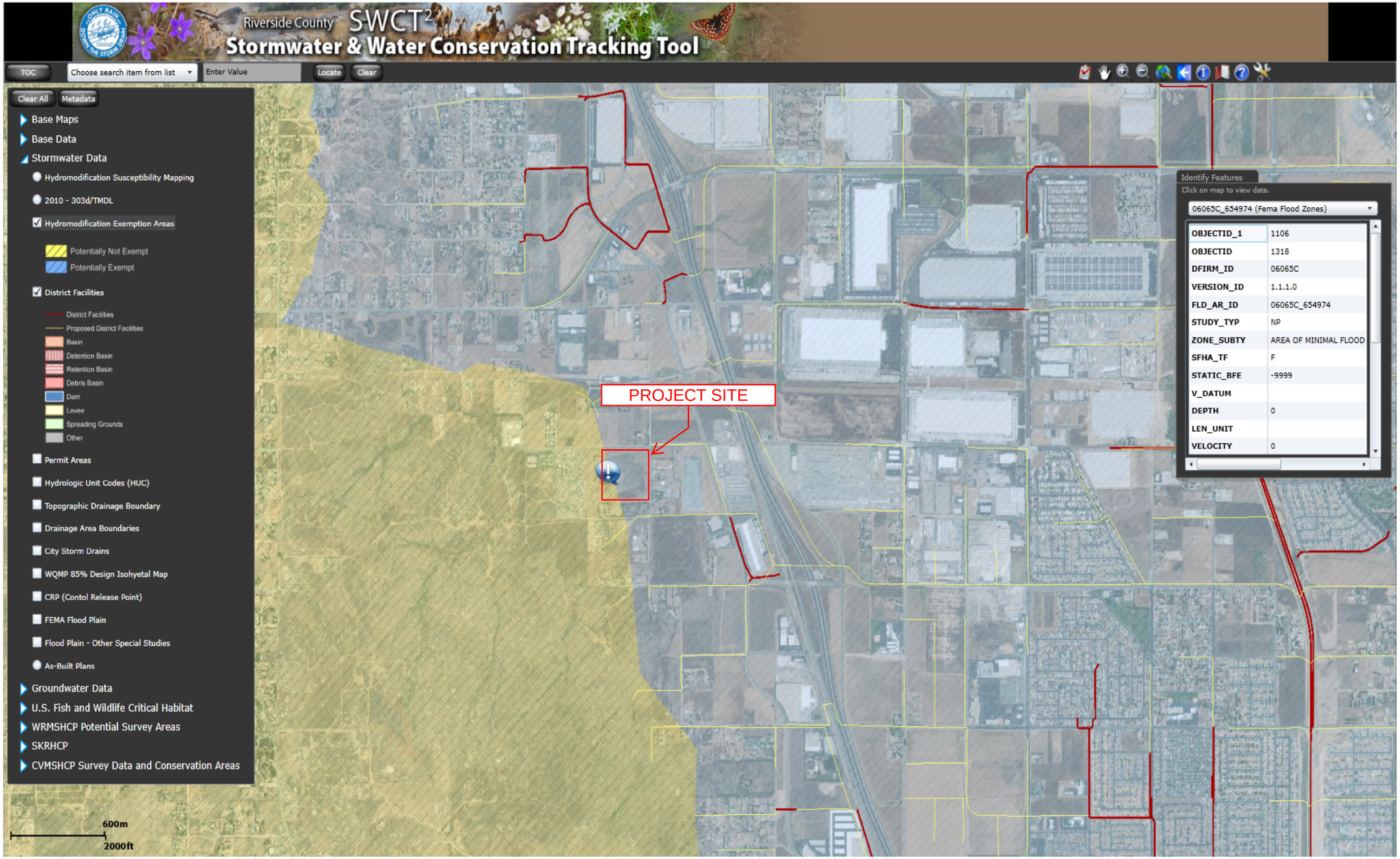
	DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type (use pull-down menu)	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Rainfall Intensity (in/hr)*	*Design Flow Rate (cfs)*	*Proposed Flow Rate (cfs)*
DMAs	*CDS #3*	*741391.2*	*Roofs*	*1.0*	*0.89*	*661321*			
		741391.2	***Total***			**661321**	**0.20**	***3***	***4.5***

Notes:
Tributary area = 17.02 ac
Q100 = 26.2 cfs

Use CDS4030-8
Bypass Flowrate Capacity = 30 cfs

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern


Riverside County SWCT²
Stormwater & Water Conservation Tracking Tool
TOC
Choose search item from list
Enter Value
Locate
Clear
Clear All
Metadata
Base Maps
Base Data
Stormwater Data
Hydromodification Susceptibility Mapping
2010 - 303d/TMDL
Hydromodification Exemption Areas
Potentially Not Exempt
Potentially Exempt
District Facilities
District Facilities
Proposed District Facilities
Basin
Detention Basin
Retention Basin
Debris Basin
Dam
Levee
Spreading Grounds
Other
Permit Areas
Hydrologic Unit Codes (HUC)
Topographic Drainage Boundary
Drainage Area Boundaries
City Storm Drains
WQMP 85% Design Isohyetal Map
CRP (Contol Release Point)
FEMA Flood Plain
Flood Plain - Other Special Studies
As-Built Plans
Groundwater Data
U.S. Fish and Wildlife Critical Habitat
WRMSHCP Potential Survey Areas
SKRHCP
CVMSHCP Survey Data and Conservation Areas
PROJECT SITE
Identify Features
Click on map to view data.
06065C_654974 (Fema Flood Zones)
OBJECTID_1 1106
OBJECTID 1318
DFIRM_ID 06065C
VERSION_ID 1.1.1.0
FLD_AR_ID 06065C_654974
STUDY_TYP NP
ZONE_SUBTY AREA OF MINIMAL FLOOD
SFHA_TF F
STATIC_BFE -9999
V_DATUM
DEPTH 0
LEN_UNIT
VELOCITY 0
600m
2000ft

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.**

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
❑ 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		
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
❑ 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.**		❑ **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.**	

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

Operation and Maintenance Plan

Project Title: Rider and Patterson Business Center (PPT220004/BGRXXXXXXX)

Original Date Prepared: November 6, 2022

Revision Date(s): _____

Revision Date(s): _____

Revision Date(s): _____

Revision Date(s): _____

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I. Inspection and Maintenance Log

Date	Observations/Actions	Inspector

Additional inspection and maintenance logs to be included in Appendix 1 of this O&M Plan.

II. Updates, Revisions, and Errata

Revision Number	Date	Brief Description of Update/Revision/Errata, include section and page number	Prepared and Approved By

Additional updates, revisions, and errata to be include in Appendix 2 of this O&M Plan.

III. Introduction

Project Description:

The project site encompasses approximately 40.87 acres where 31.52 acres are onsite improvements and the remaining 9.35 acres are offsite improvements along Rider Street, Patterson Avenue and Walnut Street. Proposed improvements to the site includes a commercial type building of approximately 583,903 square feet. There will be truck yards south and north of the building. Vehicle parking lots will be along the east side of the building and at the southwest corner of the site. Landscaping will be adjacent to the streets and scattered throughout the site. Per the soils engineer, infiltration rates throughout the site resulted below 1.6 inches per hour except for the southerly truck yard area where the recommended infiltration rate resulted in 6.1 inches per hour. Consequently, a bioretention basin (BIO "A") and an underground infiltration system (CMP "B") will be proposed to treat the runoff produced by the 85th percentile storm rainfall depth. Street runoff – including DMAs D and E which consist of steep-sloped onsite landscaped areas sheet flowing offsite due to the difference in elevation between the project site and Patterson Avenue – will be mitigated by over mitigation of the onsite runoff (actual street runoff will not be conveyed onsite). The Vbmp produced by the street's impervious disturbance (including DMAs D and E) will be provided in BIO "A". All proposed underground detention systems will be utilized to mitigate the 100-year flowrate; however, CMP "B" particularly will also be used in combination for infiltration of the 85th percentile since infiltration rates permit this. A full trash capture connector pipe screen located within the bioretention basin's outlet structure will be utilized as pretreatment. Other forms of pretreatment will consist of hydrodynamic separators prior to flows entering BIO "A" and drain inserts prior to flows entering CMP "B".

Due to the Santa Ana Watershed LID Manual's maximum 10 acre tributary limitations for bioretention facilities, BIO "A" will be sized using Section 3.7 of the Santa Margarita Watershed LID Manual for Large Bioretention/Biofiltration BMP Facilities. This excerpt is included in Attachment 10 of this WQMP report for reference. The following Large Biofiltration (no infiltration/limited infiltration) design guidelines were incorporated to BIO "A":

- Cross Section Geometry
  - Ponding depth above the engineered soil media is 0.5 feet of the 3 feet allowed.
  - The engineered media is 3 feet deep compared to the 2 feet minimum.
  - Side slopes conform to Basin Guidelines within the LID Manual.
- Pretreatment
  - All tributary areas to BIO "A" are stabilized via impervious surfaces or vegetated accordingly.
  - A manufactured pre-treatment GULD certified device is proposed for every inlet into the BIO "A". The manufactured device is Contech's CDS units, individually sized for their respective tributaries (see sizing in Appendix 6).
- Overflow structure designed per Appendix C's Basin Guidelines.
- Underdrain
  - Subdrains are designed with positive drainage of at least 0.5%.
  - The overflow structure is 0.5' above the mulch layer and sized to drain the site's runoff that is greater than the Vbmp produced by DMA A. Therefore, the underdrains are only designed for the standard Vbmp from DMA A.
  - Observation wells/cleanouts, of equal size to the 6" underdrain, are provided every 50 feet or more frequently. They will extend 6" above the mulch with lockable screw cap.
  - All underdrain piping terminates with an observation well/cleanout.
- Energy Dissipation

  - Riprap is provided at all inlets entering the large biofiltration and velocities will be reduced to no more than 2 fps.
  - No vegetation will be planted in the inlet's flow path.
- Side slope erosion control will consist of irrigated vegetation.
- Flows are distributed through multiple inlets.

Additionally, per the soils report, the depth to bedrock (impermeable layer) increases to the east of the southerly underground infiltration system; therefore, from a depth to bedrock standpoint, infiltration is feasible at the location of the infiltration system.

Existing Site:
Under existing condition, offsite runoff enter the project site at several locations. The largest tributary area is from offsite areas located south of Walnut Street. There is an existing low point at Walnut Street near the southwest corner of the project site where these flows enter the site.

Additional offsite areas enter the project site from three existing streets to the west. From south to north, the three streets are Sunny Canyon Street, Wildwood Lane and Norrisgrove Drive. Here, the streets simply end near the westerly property line where runoff continues to sheet flow into the project site.

The site is currently a vacant dirt lot with sparse natural grasses and vegetation. Runoff from the project site generally drains to the northeasterly corner of the site via natural drainage courses. As mentioned above, the project site accepts offsite runoff.

Hydrology:
Proposed conditions will continue to convey offsite tributary flows. However, with the proposed improvements, offsite flows will be intercepted by catch basins at the respective streets and then conveyed northerly through a separate storm drain to the proposed extension of the Rider Street storm drain system. Collecting these flows separately in a proposed offsite storm drain will ensure that offsite flows will not comingle with onsite runoff. The proposed offsite storm drain will collect runoff from Walnut Street, Sunny Canyon Street, Wildwood Lane, and Norrisgrove Drive, then continue northerly to Rider Street.

For onsite runoffs, the south half of the proposed building and the southerly truck yard, plus a portion of the westerly offsite berm between the site and the residential neighborhood further west (DMA B) will drain to catch basins in the truck yard. Runoffs from these areas will then be conveyed to a proposed underground infiltration system (CMP "B") within the truck yard, for treatment of the Vbmp and in order to reduce proposed condition runoffs to existing condition discharge from the site. Discharge from the underground infiltration system will be conveyed northerly via a proposed private storm drain to BIO "A", then further north via a proposed lateral to the extended Rider Street storm drain.

The easterly parking lot (DMA A) will drain to catch basins in the parking lot. Runoffs will then be conveyed to a proposed underground detention system within the parking lot strictly for underground detention. Discharge from the underground detention system, plus an entry driveway fronting Patterson Avenue, will be conveyed northerly to BIO "A" for treatment of the Vbmp, then further north to the extended Rider Street storm drain.

The north half of the proposed building and the northerly truck yard, plus a portion of the westerly offsite berm between the site and the residential neighborhood further west (DMA A) will drain to catch basins in the truck yard. Runoffs from these areas will then be conveyed to a proposed underground

detention system within the truck yard strictly for underground detention. Discharge from the underground detention system will be conveyed easterly via another proposed private storm drain to BIO “A” for treatment of the Vbmp, then further north to the extended Rider Street storm drain.

The northerly drive aisle (north of the site’s northerly truck yard) and the northerly frontage landscape, plus a smaller portion of the westerly offsite berm (DMA A) will drain to catch basins in the drive aisle and frontage landscape, respectively. Runoffs will then be conveyed easterly via another proposed private storm drain to BIO “A” for treatment of the Vbmp and then, similarly, further north to the extended Rider Street storm drain.

The easterly proposed entry driveway (DMA A) will surface drain into a proposed trench drain located in the entry driveway. Runoff will then be conveyed westerly via another proposed private storm drain to BIO “A” for treatment of the Vbmp, then further north to the extended Rider Street storm drain.

The proposed southerly landscape fronting Walnut Street (DMA C) will surface drain to Walnut Street. These landscaped areas are considered self-treating.

A full trash capture connector pipe screen located within the bioretention basin’s outlet structure will be utilized as pretreatment. Additionally, all proposed public catch basins will be equipped with full trash capture connector pipe screens.

Other forms of pretreatment will consist of hydrodynamic separators prior to flows entering BIO “A” and drain inserts prior to flows entering CMP “B”.

IV. Responsibility for Maintenance

IV.A General

Funding will be provided by the owner:

Western Realco
500 Newport Center Drive, Suite 500
Newport Beach, CA 92660
Phone: (949) 720-3787
Contact: Jeremy Mape

A copy of the Covenant Agreement will be attached in Appendix 3 of this O&M Plan.

IV.B Staff Training Program

Staff training records and descriptions will be inserted in Appendix 4 of this O&M Plan.

IV.C Records

Maintenance records are to be inserted chronologically in Appendix 1 of this O&M Plan.

IV.D Safety

All maintenance procedures shall comply with the latest OSHA standards.

V. Summary of Drainage Management Areas and Stormwater BMPs

V.A Drainage Areas

See Appendix 5 of this O&M Plan for WQMP site map.

DMA Name or ID	Surface Type(s)[1]	Area (Sq. Ft.)	Area (Acres)	DMA Type
A-1	Roofs/Conc/Asphalt	652,529	14.98	Type D
A-2	Ornamental Landscaping	180,338	4.14	Type D
B-1	Roofs/Conc/Asphalt	488,308	11.21	Type D
B-2	Ornamental Landscaping	16,988	0.39	Type D
C	Ornamental Landscaping	17,860	0.41	Type A
D	Ornamental Landscaping	3,920	0.09	Type D
E	Ornamental Landscaping	13,068	0.30	Type D
F	Ornamental Landscaping	65,776	1.51	Type D
G	Ornamental Landscaping	57,499	1.32	Type D
ST	Concrete or Asphalt	284,011	6.52	Type D

Geo-location of the BMPs using latitude and longitude coordinates

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	Latitude	Longitude
A	On-site storm drain inlets	Conceptual Grading Plans	---	---
B	Interior floor drains and elevator shaft sump pumps	N/A	---	---
D2	Landscape / Outdoor Pesticide Use	On-site Landscape Improvement Plans	---	---
G	Refuse Areas	Conceptual Grading Plans	---	---
H	Industrial processes	Conceptual Grading Plans (indoors, if any)	---	---
M	Loading Docks	Conceptual Grading Plans	---	---
P	Plazas, sidewalks, and parking lots	Conceptual Grading Plans	---	---
BIO "A"	Bioretention Basin	Conceptual Grading Plans	33.829692	-117.253573
CMP "B"	Underground Infiltration System	Conceptual Grading Plans	33.827078	-117.254682

V.B Structural Post-Construction BMPs

See Appendix 5 of this O&M Plan for WQMP site map.

Additional BMP details are available in Appendix 10 of the WQMP.

V.C Self-Retaining Areas or Other

Areas in DMA C are considered self-treating areas which will be maintained with normal landscape maintenance.

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
C	17,860	Drought Tolerant	Timed Sprinklers

VI. Stormwater BMP Design Documentation

VI.A "As-Built" Drawings of each Stormwater BMP

See Appendix 6 of this O&M Plan for "as-built" drawings.

VI.B Manufacturer's Data, Manuals, and Maintenance Requirements

Not applicable, there are no manufactured stormwater BMPs.

VI.C Specific Operation and Maintenance Concerns and Troubleshooting

Not applicable.

VII. Maintenance Schedule or Matrix

VII.A Maintenance Schedule

Schedule (Bioretention)	Inspection and Maintenance Activity (Bioretention)
Ongoing including just before the annual storm season and following rainfall events.	• Keep adjacent landscape areas maintained. Remove clipping from landscape maintenance activities. • Remove trash and debris. • Replace damaged grass and/or plants. • Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
After storm events	• Inspect areas for ponding.
Annually. Schedule these inspections within 72 hours after a significant rainfall and prior to the rainy season (October 1st). "Significant rainfall" is defined as 0.5 inches or greater of rainfall: http://www.wrh.noaa.gov/forecast/wxtables/	• Inspect/clean inlets and outlets.

Schedule (Underground Infiltration Gallery)	Inspection and Maintenance Activity (Underground Infiltration Gallery)
Semi-annually (October 1st and February 1st) through maintenance service contract with the vendor or equally qualified contractor.	The manholes shall be inspected semi-annually (October 1st and February 1st) and maintained upon sediment reaching 3-inches in depth. The rows shall be inspected and maintained by a qualified technician and he/she will properly dispose of all wastes. Manholes are installed in order to inspect and maintain the system. It is installed per OSHA codes to ensure operator and inspector safety.

Source Control BMPs

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
A. On-site storm drain inlets	• Mark all inlets with the words "Only Rain Down the Storm Drain" or similar.	• Maintain and periodically repaint or replace inlet markings annually. • Provide stormwater pollution prevention information to new site owners, lessees, or operators upon occupancy and annually thereafter. • See CASQA fact sheet SC-44 for "Drainage System Maintenance," included in Appendix of this document. • Include the following lease agreements: "Tenant shall not allow anyone to discharge anything to storm drain 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	• Interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.	• Inspect and maintain drains semi-annually to prevent blockages and overflow.
D2. Landscape / Outdoor Pesticide Use	• Landscape plans will 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. • Pest-resistant plans will be used adjacent to hardscape. • The landscape plans will consider plants appropriate to the site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	• Maintain landscaping only using minimum pesticides, when needed. • See Appendix 10 for "Landscape and Gardening" brochure by RCFlood. • Provide Integrated Pest Management (IPM) information to new owners, lessees and operators upon occupancy and annually thereafter. IPM is an effective and environmentally sensitive approach to pest management.
G. Refuse Areas	• Site refuse will be handled by contractor on a weekly basis. • Signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.	• A minimum of two receptacles will be provided and located indoors. Receptacles are to be inspected daily and repairs or replacements to leaky receptacles will be completed immediately. Receptacles are to remain covered when not in use. Dumping of liquid or hazardous wastes is prohibited. A "no hazardous materials" sign will be posted. Spills will be cleaned immediately upon discovery. Spill control materials will be available onsite. See Appendix 10 for CASQA fact sheet SC-34 for "Waste Handling and Disposal."
H. Industrial processes	• All process activities to be performed indoors. No processes to drain to exterior or to storm drain system.	• See Appendix 10 for CASQA fact sheet SC-10 for "Non-Stormwater Discharges"
M. Loading Docks	• Spills will be cleaned up immediately and disposed of properly.	• Move loaded and unloaded items indoors as soon as possible. • See Appendix 10 for CASQA fact sheet SC-30 for "Outdoor Loading and Unloading"

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
P. Plazas, sidewalks, and parking lots		• 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 washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

VII.B Service Agreement Information

See Appendix 8 of this O&M Plan for service agreement information with any contractors regarding the O&M of BMPs at the site, if any.

Appendix 1: Inspection and Maintenance Logs

Insert Additional Inspection or Maintenance Logs Here

Date	Observations/Actions	Inspector

Appendix 2: Updates, Revisions, and Errata

Insert Additional Updates, Revisions, and Errata Logs Here

Revision Number	Date	Brief Description of Update/Revision/Errata, include section and page number	Prepared and Approved By

Appendix 3: Maintenance Mechanism

Copy of Covenant Agreement
Establishing Notification Process And Responsibility
For Water Quality Management Plan Implementation And Maintenance

Notification Process and Responsibility

1. **Name:** _____
   Title: _____
   Phone No.: _____

   WQMP Responsibilities, Duties, and Activities:
   (1) Routine inspections to evaluate BMP effectiveness.
   (2) Identifying when BMPs require maintenance.
   (3) Working with qualified contractors to maintain the BMP.
   (4) Recordkeeping of inspections and maintenance activities.

2. **Name:** _____
   Title: _____
   Phone No.: _____

   WQMP Responsibilities, Duties, and Activities:
   (1) Cleaning, repairing, servicing, and maintenance of BMP.

3. **Name:** _____
   Title: _____
   Phone No.: _____

   WQMP Responsibilities, Duties, and Activities:
   (1) In event of failure, and with City Engineer's authorization, modify or replace with an upgraded BMP to prevent future failure.
   (2) Notify successors of BMPs and maintenance requirements.

Recorded at the request of: COUNTY
OF RIVERSIDE TRANSPORTATION
DEPARTMENT

THIS INSTRUMENT IS FOR THE BENEFIT
OF THE COUNTY OF RIVERSIDE AND
ENTITLED TO BE RECORDED WITHOUT
FEE.(GOV. CODE 6103)

RETURN TO:
RIVERSIDE COUNTY TRANSPORTATION
DEPARTMENT. **STOP NO. 1080**

COVENANT AND AGREEMENT REGARDING WATER QUALITY MANAGEMENT PLAN BMP, CONSENT TO INSPECT, MAINTENANCE AND INDEMNIFICATION

APN: 317-210-006, -008, -010, -011 and -018 **PROJECT No.**_____ **IP No.**_____

OWNER(S): Western Realco

PROPERTY ADDRESS: SWC of Rider Street and Patterson Avenue

LEGAL DESCRIPTION: See Exhibit A.

THIS AGREEMENT is made and entered into in Riverside County, California, this _____ day of _____ Year_____, by and between Western Realco,

(hereinafter referred to as "Covenantor" or "Owner") and the COUNTY OF RIVERSIDE via its Department of Transportation, a political subdivision of the State of California (hereinafter referred to as "County").

RECITALS

WHEREAS, the Covenantor owns real property ("Property") in the County of Riverside, State of California, more specifically described in Exhibit "A" and depicted in Exhibit "B", each of these exhibits is attached, and incorporated herein by this reference;

WHEREAS, the County is the owner of interests in that certain real property within the unincorporated area of the County of Riverside, State of California, containing storm drains, pipelines, and related appurtenances constituting the County's municipal separate storm sewer system (the County's "MS4");

WHEREAS, Covenantor intends to develop, improve, and/or use the Property is such a way that approval by the County for such development, improvement, and/or use is required pursuant to applicable laws;

WHEREAS, As a condition for said approval by the County, County required Covenantor, and Covenantor desires to, restrict the use of the Property according to the conditions, covenants, equitable servitudes, and restrictions contained herein for the express benefit of the County's MS4, which include requirements that the Property incorporate post construction on-site stormwater quality control measures;

WHEREAS, the Covenantor/Owner has chosen to install one or more bioretention basin and underground infiltration gallery, hereinafter referred to as "Device", as the on-site control measure to minimize pollutants in urban runoff;

WHEREAS, said Device has been installed in accordance with plans and specifications accepted by the County;

WHEREAS, said Device, with installation on private property is a private facility with all maintenance or replacement, therefore, the sole responsibility of the Covenantor/Owner in accordance with the terms of this Agreement;

WHEREAS, the Covenantor/Owner is aware that periodic and continuous maintenance, including, but not necessarily limited to, filter material replacement and sediment removal, is required to assure peak performance of Device and that, furthermore, such maintenance activity will require compliance with all Local, State, or Federal laws and regulations, including those pertaining; to confined space and waste disposal methods, in effect at the time such maintenance occurs;

NOW THEREFORE, incorporating the foregoing Recitals and in consideration of the covenants and conditions contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and expressly for the benefit of, and to bind, their sucessors in interest, the parties hereto agree as follows:

1. Covenantor/Owner hereby provides the County or County's designee complete access to the Device and its immediate vicinity and such access onto the property to permit access to the devise at any time, upon twenty-four *(24)* hour advance notice in writing, of any duration for the purpose of inspection, sampling and testing of the Device. County shall make every effort at all times to minimize or avoid interference with Owner's use of the Property.

2. Covenantor/Owner shall use its best efforts diligently to maintain the Device in a manner assuring peak performance at all times. All reasonable precautions shall be exercised by Owner and Owner's representative or contractor in the removal and extraction of material(s) from the Device and the ultimate disposal of the material(s) in a manner consistent with all relevant laws and regulations in effect at the time. As may be requested

from time to time by the County / Regional Water Quality Control Board (RWQCB), the Owner shall provide the RWQCB with documentation identifying the material(s) removed, the quantity, and disposal destination.

3. In the event Covenantor/Owner, or its successors or assigns, fails to accomplish the necessary maintenance contemplated by this Agreement, within five (5) days of being given written notice by the County, the County is hereby authorized to cause any maintenance necessary to be done and charge the entire cost and expense to the Owner or Owner's successors or assigns, including administrative costs and interest thereon at the maximum rate authorized by the Civil Code from the date of notice of expense until paid in full.

4. The County may require the Covenantor/Owner to post security in a form and for a time period satisfactory to the County to guarantee the performance of the obligations stated herein. Should the Owner fail to perform the obligations under this Agreement, the County may, in the case of a cash deposit, certificate of deposit or letter of credit, act for the Owner using the proceeds from it, or in the case of a surety bond, require the sureties to perform the obligations of the Agreement.

5. The County may, but shall not be obligated to, enforce this Agreement by a proceeding at law or in equity against any person or persons violating or attempting to violate any condition, covenant, equitable servitude, or restriction provided for herein, either to restrain such violation or to recover damages.

6. This Agreement constitutes the entire agreement and understanding between the parties with respect to the subject matter of this Agreement and supersedes all prior or contemporaneous agreements and understandings with respect to the subject matter hereof, whether oral or written.

7. If any part of this Agreement is declared by a final decision of a court of competent jurisdiction to be invalid for any reason, such shall not affect the validity of the rest of the Agreement. The other parts of this Agreement shall remain in effect as if this Agreement had been executed without the invalid parts(s). The parties declare that they intend and desire that the remaining parts of this Agreement continue to be effective without any part(s) that have been declared invalid.

8. This Agreement may be executed in counterparts, each of which so executed shall, irrespective of the date of its execution and delivery, be deemed an orginal, and all such counterparts together shall constitute one and the same instrument.

9. This Agreement shall be recorded in the Office of the Recorder of Riverside County, California and shall constitute notice to all successors and assigns of the title to said Property of the obligation herein set forth.

10. In the event of legal action occasioned by any default or action of the Covenantor/Owner, or its successors or assigns, then the Covenantor/Owner and its

successors or assigns agree(s) to pay all costs incurred by the County in enforcing the terms of this Agreement, including reasonable attorney's fees and costs, and that the same shall become a part of the lien against said Property.

11. Covenantor/Owner agrees to indemnify, defend, and hold harmless the County, its elected officers, employees, agents, and contractors from and against any and all liability, expense, including costs and reasonable legal fees, and claims of damage of any nature whatsoever including, but not limited to, death, bodily injury, personal injury, or property damage arising from or connected with the County inspection of the Property except where such liability, expense, or claim for damage results from the sole negligence or willful misconduct of the County.

12. It is the intent of the parties hereto that burdens and benefits herein undertaken shall constitute covenants that run with said Property and constitute a lien thereon against.

13. The obligations herein undertaken shall be binding upon the heirs, successors, executors, administrators and assigns of the parties hereto and any other present or future interest holders or estate holders in the property. The term "Owner" shall include not only the present Owner, but also its heirs, successors in interest and in title to the property, executors, administrators, and assigns. Owner shall notify any successor to title of all or part of the Property about the existence of this Agreement. Owner shall provide such notice prior to such successor obtaining an interest in all or part of the Property. Owner shall provide a copy of such notice to the County at the same time such notice is provided to the successor.

14. Time is of the essence in the performance of this Agreement.

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15. Any notice to a party required or called for in this Agreement shall be served in person, or by deposit in the U.S. Mail, first class postage prepaid, to the address set forth below. Notice(s) shall be deemed effective upon receipt, or seventy-two *(72)* hours after deposit in the U.S. Mail, whichever is earlier. A party may change a notice address only by providing written notice thereof to the other party.

COVENANTOR/OWNER:

Western Realco
500 Newport Center Drive, Suite 630
Newport Beach, CA 92660

COUNTY:

Riverside County Department of Transportation
Attn: Transportation Director
4080 Lemon Street
Riverside, CA

COUNTY OF RIVERSIDE
TRANSPORTATION DEPARTMENT

_____ _____
Mark Lancaster, P.E. Date
Director of Transportation

_____ _____
(Attest) Date

COVENANTOR/OWNER

Western Realco
Company/Corporation/Partnership

Vance Mape
(Print Name)

Director of Acquisitions
(Print Title)

Attach Notary

Appendix 4: Training Records

Insert Training Records with Brief Discussion Here

Appendix 5: Site Plan and Details

WQMP Site Map and BMP Details

Appendix 6: "As-Built" Drawings

Insert "As-Builts" Here When Available

Appendix 7: Manufacturer Information

Brochures, Manuals, and Maintenance Requirements

CONTECH®
ENGINEERED SOLUTIONS

Contech® CMP Detention & Infiltration Maintenance Guide

CONTECH®
CMP DETENTION SYSTEMS

Maintenance

Underground storm water detention and retention systems should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size or configuration of the system.

Inspection

Inspection is the key to effective maintenance and is easily performed. CONTECH recommends ongoing quarterly inspections of the accumulated sediment. Sediment deposition and transport may vary from year to year and quarterly inspections will help insure that systems are cleaned out at the appropriate time. Inspections should be performed more often in the winter months in climates where sanding operations may lead to rapid accumulations, or in equipment washdown areas. It is very useful to keep a record of each inspection. A sample inspection log is included for your use.

Systems should be cleaned when inspection reveals that accumulated sediment or trash is clogging the discharge orifice. CONTECH suggests that all systems be designed with an access/inspection manhole situated at or near the inlet and the outlet orifice. Should it be necessary to get inside the system to perform maintenance activities, all appropriate precautions regarding confined space entry and OSHA regulations should be followed.

Cleaning

Maintaining an underground detention or retention system is easiest when there is no flow entering the system. For this reason, it is a good idea to schedule the cleanout during dry weather.

Accumulated sediment and trash can typically be evacuated through the manhole over the outlet orifice. If maintenance is not performed as recommended, sediment and trash may accumulate in front of the outlet orifice. Manhole covers should be securely seated following cleaning activities.

Inspection & Maintenance Log Sample Template

_____" Diameter System			Location: Anywhere, USA		
Date	**Depth of Sediment**	**Accumulated Trash**	**Maintenance Performed**	**Maintenance Personnel**	**Comments**
12/01/10	2"	None	Removed Sediment	B. Johnson	Installed
03/01/11	1"	Some	Removed Sediment and Trash	B. Johnson	Swept parking lot
06/01/11	0"	None	None		
09/01/11	0"	Heavy	Removed Trash	S. Riley	
12/01/11	1"	None	Removed Sediment	S. Riley	
04/01/12	0"	None	None	S. Riley	
04/15/01	2	Some	Removed Sediment and Trash	ACE Environmental Services	

SAMPLE

CONTECH®
CMP DETENTION SYSTEMS

Support

Drawings and specifications are available at www.ContechES.com.

Site-specific support is available from our engineers.

CONTECH®
ENGINEERED SOLUTIONS
800.338.1122
www.ContechES.com

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Contech Engineered Solutions LLC provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, stormwater, earth stabilization and wastewater treament products. For information, visit www.ContechES.com or call 800.338.1122.

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UNITED STORM WATER CPS

Connector Pipe Screen

Technical Manual

Manufacturer, Supplier, and Service Information

Manufacturer:

United Storm Water, Inc.
14000 E. Valley Blvd
City of Industry, Ca 91746
Phone: 626-890-7027
Fax: 626-961-3166
Contact: Eugene Hernandez

Supplier:

United Storm Water, Inc.
14000 E. Valley Blvd
City of Industry, Ca 91746
Phone: 626-419-3521
Fax: 626-961-3166
Contact: Terry Flury

For all spare parts and service, Contact:

United Storm Water, Inc.
14000 E. Valley Blvd.
City of Industry, Ca 91746
Contact: Eugene Hernandez

2/25/2014

United Storm Water, Inc. CPS Technical Manual

United Storm Water, Inc. Connector Pipe Screen Installation Instructions:

1. Bring the CPS unit into the catch basin and set in front of outlet hole. The unit has 3 components, deflector, (2) "Z" panels, and the front of the screen, depending on the size of the catch basin opening. Establish a definite location for your first "Z" Panel and then mark your holes for drilling. Do the same for your second Panel.

2. Remove the CPS unit from the installation wall. Drill 3/8" holes where you marked. Make sure to drill straight into the catch basin wall to avoid mounting difficulties.

3. Hammer 3/8"x3.75" stainless steel anchor bolts into the holes.

4. After all of the anchor bolts are hammered into place, attach the "Z" panels.

5. Deflector device. Measure and cut a length of deflector stock same length as CPS unit. Make cuts using a compact grinder. Be sure to "grind smooth any sharp edges. Place directly above the CPS device. Next, mark and drill 3/8"x3.75" holes.

6. Make cuts using a compact grinder. Be sure to stand off any sharp edges.

7. Once the "Z" Panels have been custom cut to conform to the catch basin surface, attach the panels to the body of the CPS unit using the self drilling screws provided.

8. Scribe and cut the bottom of the front panel to conform to the catch basin bottom surface, then attach the front panel to the 2 "Z" panels using the self drilling screws provided.

9. Attach legs (1"x1" perforated angle) from top corners of deflector to top corners of CPS device. Secure with bolts provided.

10. Tighten all bolts to assure a tight fit.

Preventative Maintenance:

Maintenance crews should regularly check catch basins and establish a maintenance schedule based on the level of debris collected. Some areas will require more frequent cleaning than others. Catch basins should be cleared of debris to allow for water to freely flow through the screen.

Pressure-washing the unit may additionally benefit but is not necessary.

Yearly Maintenance Schedule:

Visual Inspection:

1. Built-up debris and foreign object debris can hinder the unit's operation. Remove any visible debris that may be on, in front of, and nearby the unit.
2. Look for any visible signs of vandalism or damage that may compromise the unit's ability to properly function. Attempted vandalism and slight damage should be inspected closely to ensure no future damage may result.

Replacement Schedule:

All components on United Storm Water Connector Pipe Screen are made from 304 stainless steel parts. United Storm Water, Inc. should be notified if a replacement if required.

Tools Required:

For removal of United Storm Water Connector Pipe Screen, use a 3/8" socket wrench to loosen the nuts on the anchor bolts. A socket extension may be needed for hard to reach areas.

Disassembly and Reassembly:

For removal of United Storm Water Connector Pipe Screen, use a 9/16" socket wrench to loosen the nuts on the anchor bolts. A socket extension may be needed for hard to reach areas. Carefully remove the unit once all bolts have been loosening. Realign the unit on the anchor and tighten the bolts for reassembly.

For removal of the Deflector United Storm Water Connector Pipe Screen, use a 9/16 socket wrench to loosen the nuts anchor bolts. Realign the bypass section and tighten the screws for reassembly.

CONTECH®
ENGINEERED SOLUTIONS

CDS® Inspection and Maintenance Guide

CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.

CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	yd3	m3
CDS2015-4	4	1.2	3.0	0.9	0.5	0.4
CDS2015	5	1.5	3.0	0.9	1.3	1.0
CDS2020	5	1.5	3.5	1.1	1.3	1.0
CDS2025	5	1.5	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

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Contech Engineered Solutions LLC provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, stormwater, earth stabilization and wastewater treament products. For information, visit www.ContechES.com or call 800.338.1122

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The product(s) described may be protected by one or more of the following US patents: 5,322,629; 5,624,576; 5,707,527; 5,759,415; 5,788,848; 5,985,157; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 6,998,038; 7,186,058; 7,296,692; 7,297,266; 7,517,450 related foreign patents or other patents pending.

CONTECH ENGINEERED SOLUTIONS
800.925.5240
www.ContechES.com

CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

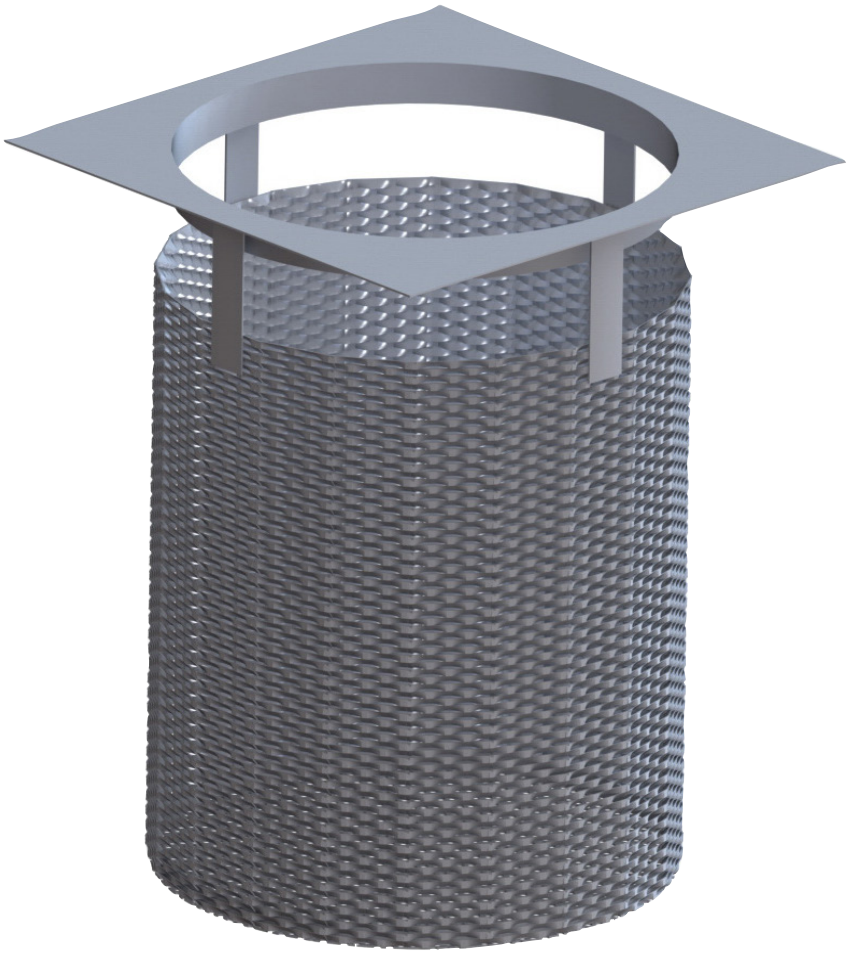
1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

Grate Inlet Filter

Bio Clean
A Forterra Company

OPERATION & MAINTENANCE



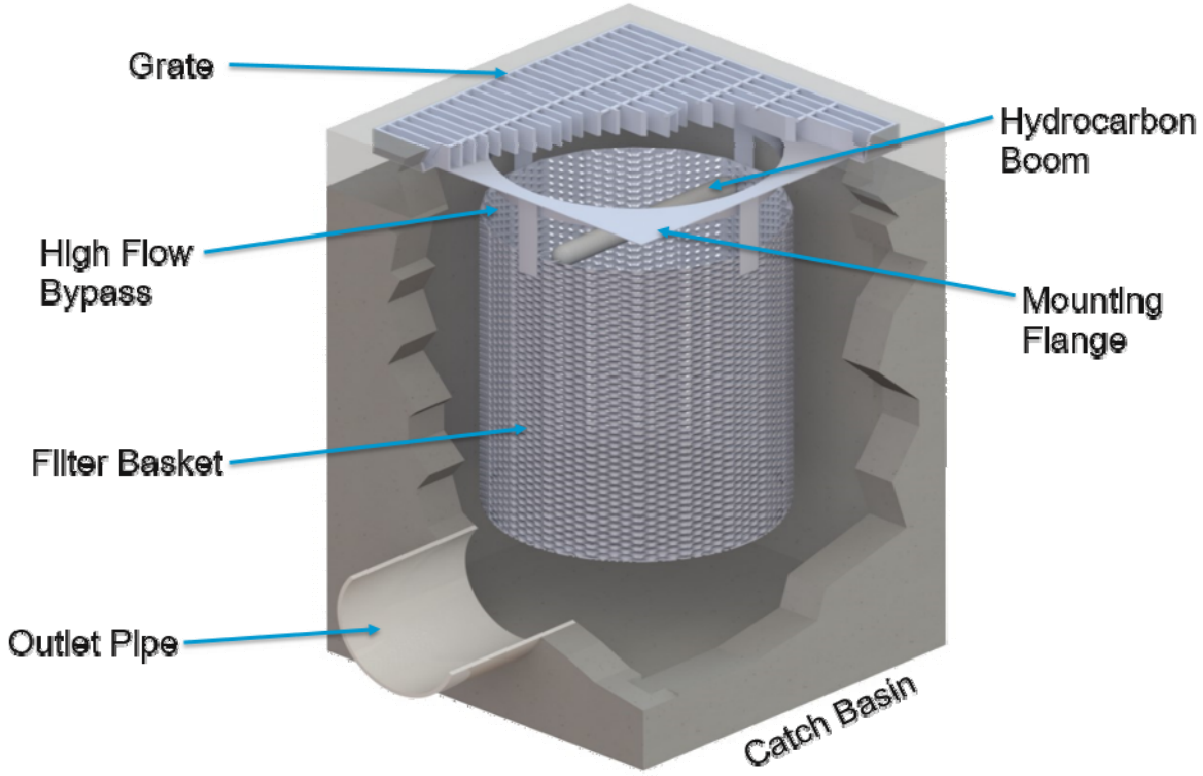
Bio Clean Environmental Services, Inc.
398 Via El Centro
Oceanside, CA 92058

www.BioCleanEnvironmental.com
p: 760.433.7640
f: 760.433.3176

OPERATION & MAINTENANCE

The Bio Clean Grate Inlet Filter is a stormwater device designed to remove high levels of trash, debris, sediments and hydrocarbons. The filter is available in several configurations including trash full capture, multi-level screening, Kraken membrane filter and media filter variations. This manual covers maintenance procedures of the trash full capture and multi-level screening configurations. A supplemental manual is available for the Kraken and media filter variations. This filter is made of 100% stainless steel and is available and various sizes and depths allowing it to fit in any grated catch basin inlet. The filters heavy duty construction allows for cleaning with any vacuum truck. The filet can also easily be cleaned by hand.

As with all stormwater BMPs, inspection and maintenance on the Grate Inlet Filter is necessary. Stormwater regulations require BMPs be inspected and maintained to ensure they are operating as designed to allow for effective pollutant removal and provide protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess site-specific loading conditions. This is recommended because pollutant loading can vary greatly from site to site. Variables such as nearby soil erosion or construction sites, winter sanding of roads, amount of daily traffic and land use can increase pollutant loading on the system. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years. Without appropriate maintenance a BMP can exceed its storage capacity which can negatively affect its continued performance in removing and retaining captured pollutants.



System Diagram:

Inspection Equipment

Following is a list of equipment to allow for simple and effective inspection of the Grate Inlet Filter:

- Bio Clean Environmental Inspection Form (contained within this manual).
- Manhole hook or appropriate tools to remove access hatches and covers.
- Appropriate traffic control signage and procedures.
- Protective clothing and eye protection.
- Note: entering a confined space requires appropriate safety and certification. It is generally not required for routine inspections or maintenance of the system.

Inspection Steps

The core to any successful stormwater BMP maintenance program is routine inspections. The inspection steps required on the Grate Inlet Filter are quick and easy. As mentioned above the first year should be seen as the maintenance interval establishment phase. During the first year more frequent inspections should occur in order to gather loading data and maintenance requirements for that specific site. This information can be used to establish a base for long-term inspection and maintenance interval requirements.

The Grate Inlet Filter can be inspected though visual observation. All necessary pre-inspection steps must be carried out before inspection occurs, such as safety measures to protect the inspector and nearby pedestrians from any dangers associated with an open grated inlet. Once the grate has been safely removed the inspection process can proceed:

- Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other info (see inspection form).
- Observe the filter with the grate removed.
- Look for any out of the ordinary obstructions on the grate or in the filter and its bypass. Write down any observations on the inspection form.
- Through observation and/or digital photographs estimate the amount of trash, foliage and sediment accumulated inside the filter basket. Record this information on the inspection form.
- Observe the condition and color of the hydrocarbon boom. Record this information on the inspection form.
- Finalize inspection report for analysis by the maintenance manager to determine if maintenance is required.

Maintenance Indicators

Based upon observations made during inspection, maintenance of the system may be required based on the following indicators:

- Missing or damaged internal components.
- Obstructions in the filter basket and its bypass.
- Excessive accumulation of trash, foliage and sediment in the filter basket. Maintenance is required when the basket is greater than half-full.
- The following chart shows the 50% and 100% storage capacity of each filter height:

Model	Filter Basket Diameter (in)	Filter Basket Height (in)	50% Storage Capacity (cu ft)	100% Storage Capacity (cu ft)
BC-GRATE-12-12-12	10.00	12.00	0.27	0.55
BC-GRATE-18-18-18	16.00	18.00	1.05	2.09
BC-GRATE-24-24-24	21.00	24.00	2.41	4.81
BC-GRATE-30-30-24	27.00	24.00	3.98	7.95
BC-GRATE-36-36-24	33.00	24.00	5.94	11.88
BC-GRATE-48-48-18	44.00	18.00	7.92	15.84

Maintenance Equipment

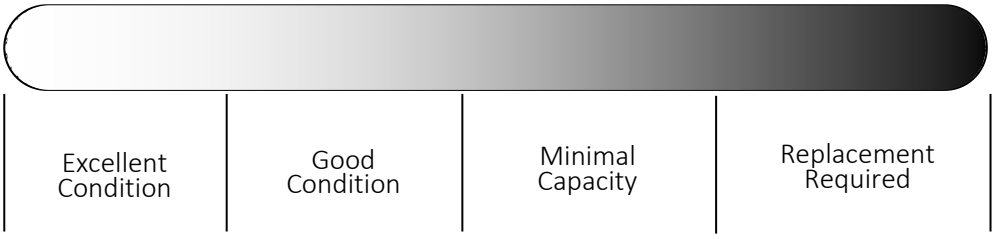
It is recommended that a vacuum truck be utilized to minimize the time required to maintain the Curb Inlet Filter, though it can easily cleaned by hand:

- Bio Clean Environmental Maintenance Form (contained in O&M Manual).
- Manhole hook or appropriate tools to remove the grate.
- Appropriate safety signage and procedures.
- Protective clothing and eye protection.
- Note: entering a confined space requires appropriate safety and certification. It is generally not required for routine maintenance of the system. Small or large vacuum truck (with pressure washer attachment preferred).

Maintenance Procedures

It is recommended that maintenance occurs at least two days after the most recent rain event to allow debris and sediments to dry out. Maintaining the system while flows are still entering it will increase the time and complexity required for maintenance. Cleaning of the Grate Inlet Filter can be performed utilizing a vacuum truck. Once all safety measures have been set up cleaning of the Grate Inlet Filter can proceed as followed:

- Remove grate (traffic control and safety measures to be completed prior).
- Using an extension on a vacuum truck position the hose over the opened catch basin. Insert the vacuum hose down into the filter basket and suck out trash, foliage and sediment. A pressure wash is recommended and will assist in spraying of any debris stuck on the side or bottom of the filter basket. Power wash off the filter basket sides and bottom.
- Next remove the hydrocarbon boom that is attached to the inside of the filter basket. The hydrocarbon boom is fastened to rails on two opposite sides of the basket (vertical rails). Assess the color and condition of the boom using the following information in the next bullet point. If replacement is required install and fasten on a new hydrocarbon boom. Booms can be ordered directly from the manufacturer.
- Follow is a replacement indication color chart for the hydrocarbon booms:



- The last step is to replace the grate and remove all traffic control.
- All removed debris and pollutants shall be disposed of following local and state requirements.
- Disposal requirements for recovered pollutants may vary depending on local guidelines. In most areas the sediment, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste.
- In the case of damaged components, replacement parts can be ordered from the manufacturer. Hydrocarbon booms can also be ordered directly from the manufacturer as previously noted.

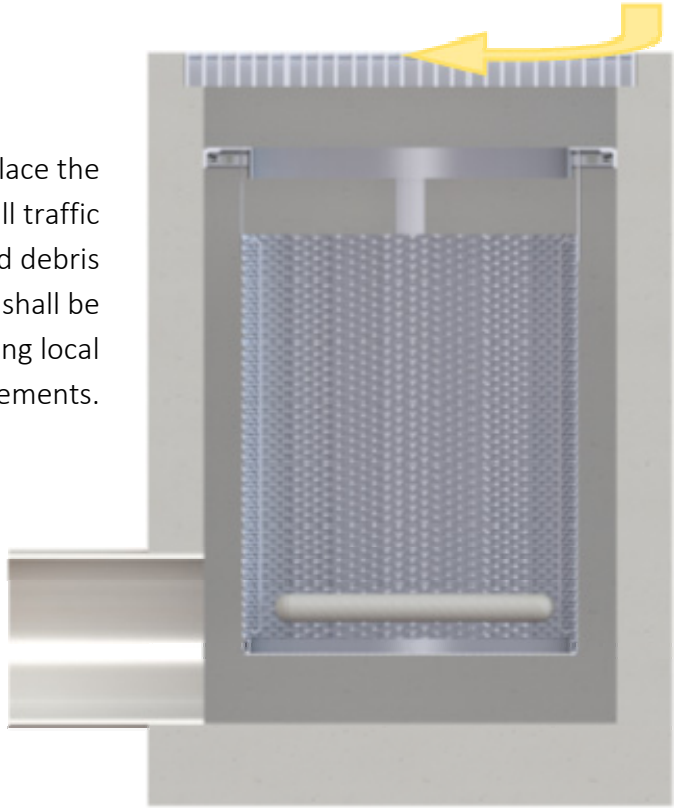
Maintenance Sequence

Remove grate and set up vacuum truck to clean the filter basket.

Insert the vacuum hose down into the filter basket and suck out debris. Use a pressure washer to assist in vacuum removal. Pressure wash off screens.

Remove the hydrocarbon boom that is attached to the inside of the filter basket. The hydrocarbon boom is fastened to rails on two opposite sides of the basket (vertical rails). Assess the color and condition of the boom using the following information in the next bullet point. If replacement is required install and fasten on a new hydrocarbon boom.

Close up and replace the grate and remove all traffic control. All removed debris and pollutants shall be disposed of following local and state requirements.



For Maintenance Services or Information Please Contact Us At:
760-433-7640
Or Email:
info@biocleanenvironmental.com

Bio Clean
A Forterra Company

Inspection and Maintenance Report
Catch Basin Only

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ____/____/_____ Time _____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ ☐

Weather Condition _____ Additional Notes _____

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Insert	Catch Basin Size	Evidence of Illicit Discharge?	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Signs of Structural Damage?	Functioning Properly or Maintenance Needed?
1	Lat: Long:							
2	Lat: Long:							
3	Lat: Long:							
4	Lat: Long:							
5	Lat: Long:							
6	Lat: Long:							
7	Lat: Long:							
8	Lat: Long:							
10	Lat: Long:							
11	Lat: Long:							
12	Lat: Long:							

Comments:

Appendix 8: Service Agreement Information

Insert Contractor Information (if any)

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

WHEN IT RAINS IT DRAINS

After the Storm

For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps

EPA United States Environmental Protection Agency

EPA 833-B-03-002

January 2003

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THE YEAR OF CLEAN WATER
Celebration & Recommitment

A Citizen's Guide to Understanding Stormwater

WHEN IT RAINS IT DRAINS

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.

Why is stormwater runoff a problem?

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.

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.

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.

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.

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.

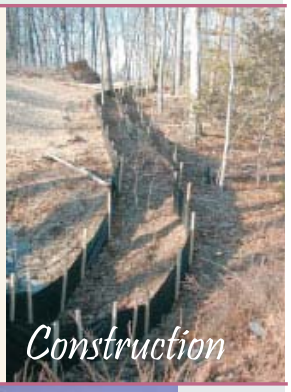
Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.

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.

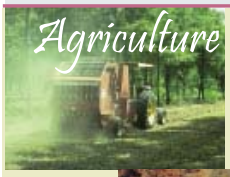
Construction



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.

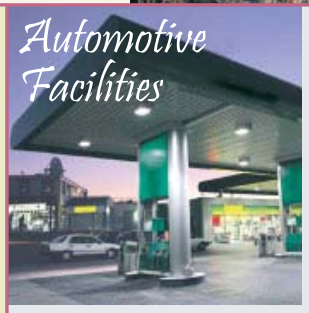
- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.

Forestry

Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

Automotive Facilities



Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

For Information:

For more information on the General Industrial Storm Water Permit contact:

State Water Resources Control Board (SWRCB)
(916) 657-1146 or www.swrcb.ca.gov/ or, at your Regional Water Quality Control Board (RWQCB).

Santa Ana Region (8)
California Tower
3737 Main Street, Ste. 500
Riverside, CA 92501-3339
(909) 782-4130

San Diego Region (9)
9771 Clairemont Mesa Blvd., Ste. A
San Diego, CA 92124
(619) 467-2952

Colorado River Basin Region (7)
73-720 Fred Waring Dr., Ste. 100
Palm Desert, CA 92260
(760) 346-7491

Spill Response Agency:
Haz-Mat: (909) 358-5055
Hazardous Waste Disposal: (909) 358-5055
Recycling Information: 1-800-366-SAVE
To Report Illegal Dumping or a Clogged Storm Drain: 1-800-506-2555

To order additional brochures or to obtain information on other pollution prevention activities, call:
(909) 955-1111.

StormWater CleanWater
PROTECTION PROGRAM

Riverside County gratefully acknowledges the State Water Quality Control Board and the American Public Works Association, Storm Water Quality Task Force for the information provided in this brochure.

Did You Know . . .

Your Facility May Need A Storm Water Permit?

Many industrial facilities and manufacturing operations must obtain coverage under the Industrial Activities Storm Water General Permit

FIND OUT
IF YOUR FACILITY MUST OBTAIN A PERMIT

StormWater Pollution . . . What you should know

Riverside County has two drainage systems - sanitary sewers and storm drains. The storm drain system is designed to help prevent flooding by carrying excess rainwater away from streets. Since the storm drain system does not provide for water treatment, it also serves the *unintended* function of transporting pollutants directly to our waterways.

Unlike sanitary sewers, storm drains are not connected to a treatment plant - they flow directly to our local streams, rivers and lakes.

In recent years, awareness of the need to protect water quality has increased. As a result, federal, state, and local programs have been established to reduce polluted stormwater discharges to our waterways. The emphasis of these programs is to prevent stormwater pollution since it's much easier, and less costly, than cleaning up "after the fact."

National Pollutant Discharge Elimination System (NPDES)

In 1987, the Federal Clean Water Act was amended to establish a framework for regulating industrial stormwater discharges under the NPDES permit program. In California, NPDES permits are issued by the State Water Resources Control Board (SWRCB) and the nine (9) Regional Water Quality Control Boards (RWQCB). In general, certain industrial facilities and manufacturing operations must obtain coverage under the Industrial Activities Storm Water General Permit if the type of facilities or operations falls into one of the several categories described in this brochure.

How Do I Know If I Need A Permit?

Following are ***general descriptions*** of the industry categories types that are regulated by the Industrial Activities Storm Water General Permit. Contact your local Region Water Quality Control Board to determine if your facility/operation requires coverage under the Permit.

➜ Facilities such as cement manufacturing; feedlots; fertilizer manufacturing; petroleum refining; phosphate manufacturing; steam electric power generation; coal mining; mineral mining and processing; ore mining and dressing; and asphalt emulsion;

➜ Facilities classified as lumber and wood products (except wood kitchen cabinets); pulp, paper, and paperboard mills; chemical producers (except some pharmaceutical and biological products); petroleum and coal products; leather production and products; stone, clay and glass products; primary metal industries; fabricated structural metal; ship and boat building and repairing;

➜ Active or inactive mining operations and oil and gas exploration, production, processing, or treatment operations;

➜ Hazardous waste treatment, storage, or disposal facilities;

➜ Landfills, land application sites and open dumps that receive or have received any industrial waste; unless there is a new overlying land use such as a golf course, park, etc., and there is no discharge associated with the landfill;

➜ Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards;

➜ Steam electric power generating facilities, facilities that generate steam for electric power by combustion;

➜ Transportation facilities that have vehicle maintenance shops, fueling facilities, equipment cleaning operations, or airport deicing operations. This includes school bus maintenance facilities operated by a school district;

➜ Sewage treatment facilities;

➜ Facilities that have areas where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water.

How do I obtain coverage under the Industrial Activities Storm Water General Permit?

Obtain a permit application package from your local Regional Water Quality Control Board listed on the back of this brochure or the State Water Resources Control Board (SWRCB). Submit a completed Notice of Intent (NOI) form, site map and the appropriate fee ($250 or $500) to the SWRCB. Facilities must submit an NOI thirty (30) days prior to beginning operation. Once you submit the NOI, the State Board will send you a letter acknowledging receipt of your NOI and will assign your facility a waste discharge identification number (WDID No.). You will also receive an annual fee billing. These billings should roughly coincide with the date the State Board processed your original NOI submittal.

What are the requirements of the Industrial Activities Storm Water General Permit?

The basic requirements of the Permit are:

1. The facility must eliminate any non-stormwater discharges or obtain a separate permit for such discharges.

2. The facility must develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must identify sources of pollutants that may be exposed to stormwater. Once the sources of pollutants have been identified, the facility operator must develop and implement Best Management Practices (BMPs) to minimize or prevent polluted runoff.

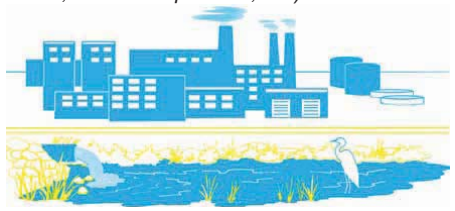
   Guidance in preparing a SWPPP is available from a document prepared by the California Storm Water Quality Task Force called the California Storm Water Best Management Practice Handbook.

3. The facility must develop and implement a Monitoring Program that includes conducting visual observations and collecting samples of the facility's storm water discharges associated with industrial activity. The General Permit requires that the analysis be conducted by a laboratory that is certified by the State of California.

4. The facility must submit to the Regional Board, every July 1, an annual report that includes the results of its monitoring program.

A Non-Storm Water Discharge is... *any discharge to a storm drain system that is not composed entirely of storm water. The following non-storm water discharges are authorized by the General Permit: fire hydrant flushing; potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems; drinking fountain water; atmospheric condensates including refrigeration, air conditioning, and compressor condensate; irrigation drainage; landscape watering; springs; non-contaminated ground water; foundation or footing drainage; and sea water infiltration where the sea waters are discharged back into the sea water source.*

A BMP is . . . *a technique, process, activity, or structure used to reduce the pollutant content of a storm water discharge. BMPs may include simple, non-structural methods such as good housekeeping, staff training and preventive maintenance. Additionally, BMPs may include structural modifications such as the installation of berms, canopies or treatment control (e.g. setting basins, oil/water separators, etc.)*



WARNING*: There are significant penalties for non-compliance: a minimum fine of $5,000 for failing to obtain permit coverage, and, up to $10,000 per day, per violation plus $10 per gallon of discharge in excess of 1,000 gallons.*

Stormwater Pollution

What you should know for...

Industrial & Commercial Facilities

Best Management Practices (BMPS) for:

- Industrial Facilities
- Commercial Facilities

Riverside County Stormwater Program Members

City of Banning
(951) 922-3105

City of Beaumont
(951) 769-8520

City of Calimesa
(909) 795-9801

City of Canyon Lake
(951) 244-2955

City of Cathedral City
(760) 770-0340

City of Coachella
(760) 398-3502

City of Corona
(951) 736-2447

City of Desert Hot Springs
(760) 329-6411

City of Eastvale
(951) 361-0900

City of Hemet
(951) 765-2300

City of Indian Wells
(760) 346-2489

City of Indio
(760) 391-4000

City of Jurupa Valley
(951) 332-6464

City of Lake Elsinore
(951) 674-3124

City of La Quinta
(760) 777-7000

City of Menifee
(951) 672-6777

City of Moreno Valley
(951) 413-3000

City of Murrieta
(951) 304-2489

City of Norco
(951) 270-5607

City of Palm Desert
(760) 346-0611

City of Palm Springs
(760) 323-8299

City of Perris
(951) 943-6100

City of Rancho Mirage
(760) 324-4511

City of Riverside
(951) 826-5311

City of San Jacinto
(951) 487-7330

City of Temecula
(951) 694-6444

City of Wildomar
(951) 677-7751

Coachella Valley Water District
(760) 398-2651

County of Riverside
(951) 955-1000

Riverside County Flood Control District
(951) 955-1200

YOU can prevent Stormwater Pollution following these practices...

Industrial and Commercial Facilities

The Riverside County Stormwater Program has identified a number of Best Management Practices (BMPs) for Industrial and Commercial Facilities. These BMPs control and reduce stormwater pollutants from reaching our storm drain system and ultimately our local water bodies. City and County ordinances require businesses to use these BMPs to protect our water quality. Local cities and the County are required to verify implementation of these BMPs by performing regular facility inspections.

Prohibited Discharges

Discontinue all non-stormwater discharges to the storm drain system. It is *prohibited* to discharge any chemicals, paints, debris, wastes or wastewater into the gutter, street or storm drain.

Outdoor Storage BMPs

- Install covers and secondary containment areas for all hazardous materials and wastes stored outdoors in accordance with County and/or City standards.
- Keep all temporary waste containers covered, at all times when not in use.
- Sweep outdoor areas instead of using a hose or pressure washer.
- Move all process operations including vehicle/equipment maintenance inside of the building or under a covered and contained area.
- Wash equipment and vehicles in a contained and covered wash bay which is closed-loop or connected to a clarifier sized to local standards and discharged to a sanitary sewer or take them to a commercial car wash.

Spills and Clean Up BMPs

- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep up the area.
- Clean up spills immediately when they occur, using dry clean up methods such as absorbent materials or sweep followed by proper disposal of materials.
- Always have a spill kit available near chemical loading dock doors and vehicle maintenance and fueling areas.
- Follow your Business Emergency Plan, as filed with the local Fire Department.
- Report all prohibited discharges and non-implementation of BMPs to your local Stormwater Coordinator as listed on the back of this pamphlet.
- Report hazardous materials spills to 951-358-5055 or call after hours to 951-782-2973 or, if an emergency, call the Fire Department's Haz Mat Team at 911.

Plastic Manufacturing Facilities BMPs

AB 258 requires plastic product manufacturers to use BMPs, such as safe storage and clean-up procedures to prevent plastic pellets (nurdles) from entering the waterway. The plastic pellets are released into the environment during transporting, packaging and processing and migrate to waterways through the storm drain system. AB 258 will help protect fish and wildlife from the hazards of plastic pollution.

Training BMPs

As prescribed by your City and County Stormwater Ordinance(s), train employees in spill procedures and prohibit non-stormwater discharges to the storm drain system. Applicable BMP examples can be found at www.cabmphandbooks.com.

Permitting

Stormwater discharges associated with specific categories for industrial facilities are regulated by the State Water Resources Control Board through an Industrial Stormwater General Permit. A copy of this General Permit and application forms are available at: www.waterboards.ca.gov, select stormwater then the industrial quick link.

To report illegal dumping or for more information on stormwater pollution prevention call: 1-800-506-2555 or e-mail us at: fcnpdes@rcflood.org.

Helpful telephone numbers and links:

Riverside County Stormwater Protection Partners

Flood Control District	(951) 955-1200
County of Riverside	(951) 955-1000
City of Banning	(951) 922-3105
City of Beaumont	(951) 769-8520
City of Calimesa	(909) 795-9801
City of Canyon Lake	(951) 244-2955
Cathedral City	(760) 770-0327
City of Coachella	(760) 398-4978
City of Corona	(951) 736-2447
City of Desert Hot Springs	(760) 329-6411
City of Eastvale	(951) 361-0900
City of Hemet	(951) 765-2300
City of Indian Wells	(760) 346-2489
City of Indio	(760) 391-4000
City of Lake Elsinore	(951) 674-3124
City of La Quinta	(760) 777-7000
City of Menifee	(951) 672-6777
City of Moreno Valley	(951) 413-3000
City of Murrieta	(951) 304-2489
City of Norco	(951) 270-5607
City of Palm Desert	(760) 346-0611
City of Palm Springs	(760) 323-8299
City of Perris	(951) 943-6100
City of Rancho Mirage	(760) 324-4511
City of Riverside	(951) 361-0900
City of San Jacinto	(951) 654-7337
City of Temecula	(951) 694-6444
City of Wildomar	(951) 677-7751

REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555 or e-mail us at
fcnpdes@rcflood.org

- Riverside County Flood Control and Water Conservation District
  www.rcflood.org

Online resources include:

- California Storm Water Quality Association
  www.casqa.org
- State Water Resources Control Board
  www.waterboards.ca.gov
- Power Washers of North America
  www.thepwna.org

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

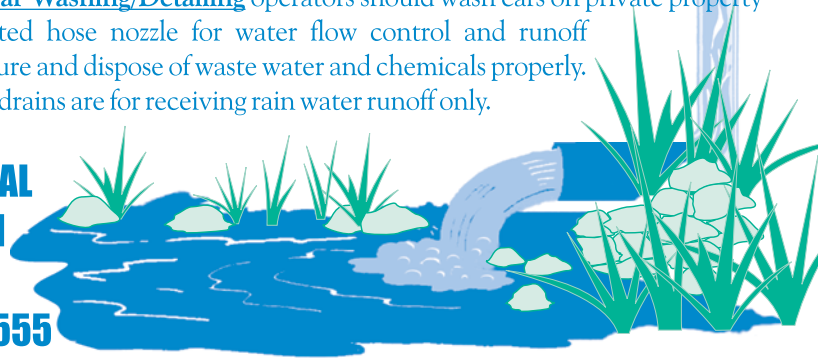
Do you know where street flows actually go?

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.

...ONLY RAIN... DOWN THE 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.

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

SAMPLE STENCIL

PER BMP SD-13

3.7 Guidance for Large Bioretention/Biofiltration BMP Facilities

No BMP worksheet is provided. For use, include designs on the WQMP site map with a cross section. Adequate details on the grading plans are required to demonstrate the project design incorporates all of the applicable design criteria.

Applicability	Large sites, multi-parcel sites, BMPs treating greater than 5 acres This fact sheet is intended to be used in combination with Fact Sheet 3.4, 3.5, or 3.6 to provide guidance for how to scale up the design of small scale features to larger scale basins
LID BMPs	Bioretention, Biofiltration with Partial Infiltration, and Biofiltration with No Infiltration

Limits on Use and Applicability

This fact sheet provides guidance for the design, installation, and maintenance of regional scale bioretention/biofiltration Best Management Practices (BMPs) for large multi-parcel projects. The requirements included in this fact sheet are in addition to, those specified in the LID BMP Handbook Fact Sheets for Bioretention (3.4), Biofiltration with Partial Infiltration (3.5), and Biofiltration with No Infiltration (3.6). The user will still need to refer to those fact sheets. This fact sheet then provides additional or overriding criteria for facilities that are designed at a larger scale. These additional criteria are necessary to address unique design challenges associated with larger facilities.

Use of regional scale facilities is at the discretion of the Copermittee. Before continuing with design of regional scale facilities, PDPs shall consult with the Copermittee with jurisdiction over the project site.

Categories of Regional Bioretention/Biofiltration Facilities

The same categories of regional bioretention/biofiltration facilities apply at a regional scale and need to be selected based on the feasibility criteria at the location.

- Bioretention (full infiltration) – Fact Sheet 3.4
- Biofiltration with partial infiltration – Fact Sheet 3.5
- Biofiltration (no infiltration/limited infiltration) – Fact Sheet 3.6

Using a regional facility does not preclude the requirement to evaluate infiltration feasibility criteria. Large facilities require a thorough and detailed assessment of the sites underlying infiltration rates and geotechnical environment. Refer to the Santa Margarita Watershed WQMP for complete feasibility analysis requirements.

Basic Design Requirements and Provisions

Basin Guidelines

All regional facilities shall be designed in accordance with the "Basin Guidelines" included in Appendix C of the LID BMP Handbook. Section 1 of the "Basin Guidelines" presents guidelines

and standards for the design and maintenance of water quality basins used within Riverside County including provisions for:

- General Criteria
- Geotechnical Reports
- Basin Grading Parameters
- Setbacks
- Outlet Structures and Spillways
- Maintenance Access
- Landscaping
- Fencing, and
- Additional Requirements

Site Geotechnical Investigation

A site-specific geotechnical investigation is required to determine subsurface conditions, infiltration rates, the seasonal high ground water elevation (SHGWE), and impacts to site environs as listed in the Feasibility Criteria. The investigation must be conducted by or under direct supervision of a State of California-licensed engineering geologist, geotechnical engineer, or civil engineer with experience in geotechnical engineering, and in compliance with the *SMR WQMP*. The Geotechnical Report shall meet the minimum requirements of the "Basin Guidelines" and provide the following additional information:

- Infiltration rates (in accordance with the "Infiltration Testing Guidelines" included in Appendix A)
- Seasonal high groundwater levels
- Potential for groundwater mounding below the facility or down gradient
- Geotechnical hazards
- Other impacts to site environs, such as water balance impacts on biological resources
- Utilities

Summary of BMP Design Parameters

The BMP design parameters contained in the respective fact sheets for Bioretention, Biofiltration with Partial Infiltration, and Biofiltration with No Infiltration apply to the design of large scale facilities of the same type; however, additional criteria also apply. Table 1 below provides a summary of the standard and augmented design components required for large scale facilities. Where augmented components are specified, additional design criteria are provided in this fact sheet to augment the criteria in the standard fact sheets.

Table 1. Design Requirements for BMP Components

Component	Design Requirements
Pretreatment	Augmented
Cross Section Geometry	Augmented
Overflow	Augmented
Engineered Soil Media	Standard
Subsurface Storage Layer	Standard
Underdrain	Augmented
Energy Dissipation	Augmented
Internal Flow Distribution	Augmented
Media Properties and Outlet Control	Augmented
Landscaping	Standard
Vector Control	Standard
Maintenance Access	Augmented
Construction Considerations	Augmented
Sizing	Standard

Augmented Design Requirements for Regional Scale Facilities

This section contains the augmented design parameters and requirements that are unique to Large Bioretention/Biofiltration Facilities. These provisions help to maintain BMP function and performance in larger facilities and provide additional storage and routing options that are not applicable to smaller scale facilities.

Cross Section Geometry

The following design parameters for regional scale facilities shall be used in place of the corresponding parameters for standard facilities:

- The ponding depth above the engineered soil media shall not exceed 3 feet or the maximum depth that can be drained in 72 hours. A shorter drawdown time may be specified if necessary to support the selected vegetation.
- The engineered soil media shall be a minimum of 2 feet deep.
- Side slopes shall conform to the Basin Guidelines in Appendix C.

Pretreatment

Pretreatment shall be provided in order to reduce the sediment load entering the facility and to maintain the infiltration/filtration rate of the basin. This is more critical for regional facilities as they tend to be deeper and therefore have a larger sediment load per unit area of media.

Where feasible, the following pre-treatment approach is recommended:

- Stabilization or bypass of all exposed soil areas in the watershed.

- Use of a manufactured pre-treatment system with a GULD certification for "pre-treatment" or "basic treatment" per Washington State TAPE Program. Currently approved products: are here: http://www.ecy.wa.gov/programs/wq/stormwater/newtech/technologies.html. Use Internet Explorer for this web page.

The minimum pretreatment mechanism shall be a sedimentation basin or forebay with a volume equivalent to 20 percent of the BMP volume and shall be separated by a berm with a height of at least half of the total ponding depth of the facility.

Overflow

Regional facilities shall conform to the requirements included in the "Basin Guidelines" (Appendix C). These guidelines provide guidance for the design of outlet structures and spillways.

Underdrain

Hydraulic calculations shall be used to determine necessary size of underdrains. It should not be assumed that the 6-inch diameter default for smaller systems will be adequate for larger systems. Subdrains shall be sloped with positive drainage of at least 0.5%.

Rigid non-perforated observation pipes with a diameter equal to the underdrain diameter shall be connected to the underdrain every 50 feet to provide a clean-out port as well as an observation well to monitor dewatering rates.

- The wells/cleanouts shall be connected to the underdrain with the appropriate manufactured connections.
- The wells/cleanouts shall extend 6 inches above the top elevation of the bioretention facility mulch, and shall be capped with a lockable screw cap. Cleanouts may be integrated with vents, in which case the vent should extend above the facility high water line.
- The ends of underdrain pipes not terminating in an observation well/cleanout shall be capped.

Energy Dissipation

Energy dissipation must be provided to prevent erosion of the engineered soil media layer. Internal erosion is a greater risk for larger BMPs due to the higher flow rates and velocities routed to them. Energy dissipation is required meeting the following provisions:

1. All significant inlets shall enter the sediment forebay, if a sediment forebay is provided as the required pretreatment device. Significant inlets include any piped, channeled or conveyed inlets. If a forebay is not provided, a stilling well is recommended.
2. Energy dissipation shall be provided at each inlet to the facility (including curb-cuts) and shall be engineered to control the velocity of inflows to less than 2 feet per second to prevent scour of the media bed.

3. Woody plants (trees, shrubs, etc.) shall not be placed directly in the entrance flow path, but may be used in other portions of the regional facility.

Side Slope Erosion Control

Side slopes of regional facilities can contribute large sediment loads if not full stabilized prior to commissioning of the system. The design and construction phasing shall demonstrate how side slopes will be stabilized to minimize erosion. Example design approaches include:

- Revegetation with dense grass, including irrigation
- Flexible soil armoring grid products combined with revegetation

Flow Distribution System

An internal flow distribution system should be considered to convey pre-treated inflows more evenly across the media bed. This helps avoid scour caused by concentrated flow of water over the media surface near the inlet. It is also desirable to avoid short circuiting[1]. Example design approaches for flow distribution include:

- Design a distribution channel or perforated pipe around a portion of the perimeter (1/2 to 2/3 of the perimeter of the system) and internal to the facility, where needed, to distribute flows within the facility.
- A distribution channel could consist of shallow swale (3 to 6 inches deep) in the media bed, armored with turf reinforcement matting, other geotextile, or cobbles, to withstand higher velocities.
- The distribution system should be designed to drain completely between storm events.

Media Bed Hydraulics and Outlet Control

The following design approach for media outlet control should be considered to help improve filtration processes and media longevity for systems that are designed as biofiltration (with or without partial infiltration)

1. An outlet-controlled underdrain system, consisting of an orifice or other flow control device that controls the rate at which water discharges from the system underdrain.[2]

---

[1] Short-circuiting of flows refers to a disproportionately high fraction of the total filtration occurring in the immediate vicinity of the inlet. These conditions are undesirable as this can overwhelm biological functions and treatment processes in the areas receiving the majority of the flow and result in lower treatment performance on average.

[2] When an outlet-controlled underdrain is used, the rate of flow through the media is controlled by the rate that water can discharge from the underdrain orifice rather than the filtration rate of the media. The filtration rate of the media may vary spatially and will change with time. The use of an outlet controlled underdrain promotes more uniform infiltration across the media bed and longer average contact time with the biofiltration media. It also allows

2. When an outlet control is used, the initial media permeability may be higher (20 to 80 in/hr).

3. The outlet control is then designed such that the average infiltration rate through the media (i.e., the rate at which water passes through the media; as controlled by the outlet, not by the saturated hydraulic conductivity of the media) is approximately 2.5 to 5 in/hr.

4. The facility must drain freely to an acceptable discharge point.

5. If the design configuration has potential for trapped air in the underdrain system to interfere with infiltration through the media bed (i.e., an "airlock"), it may be necessary to vent at an elevation above the high water line.

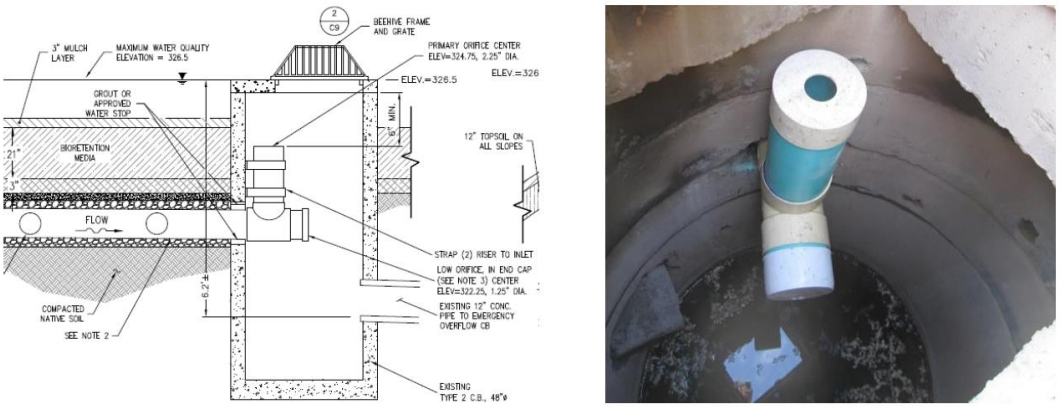


Figure 1. Example Outlet Control Structure

Design for LID and Hydromodification Control

Large bioretention/biofiltration basins can be designed for both LID and hydromodification control. Figure 2 shows schematics of how LID and hydromodification designs can be integrated.

the biofiltration media to be designed with a higher initial saturated hydraulic conductivity, such that a greater degree of clogging can occur before maintenance of the media bed is required.

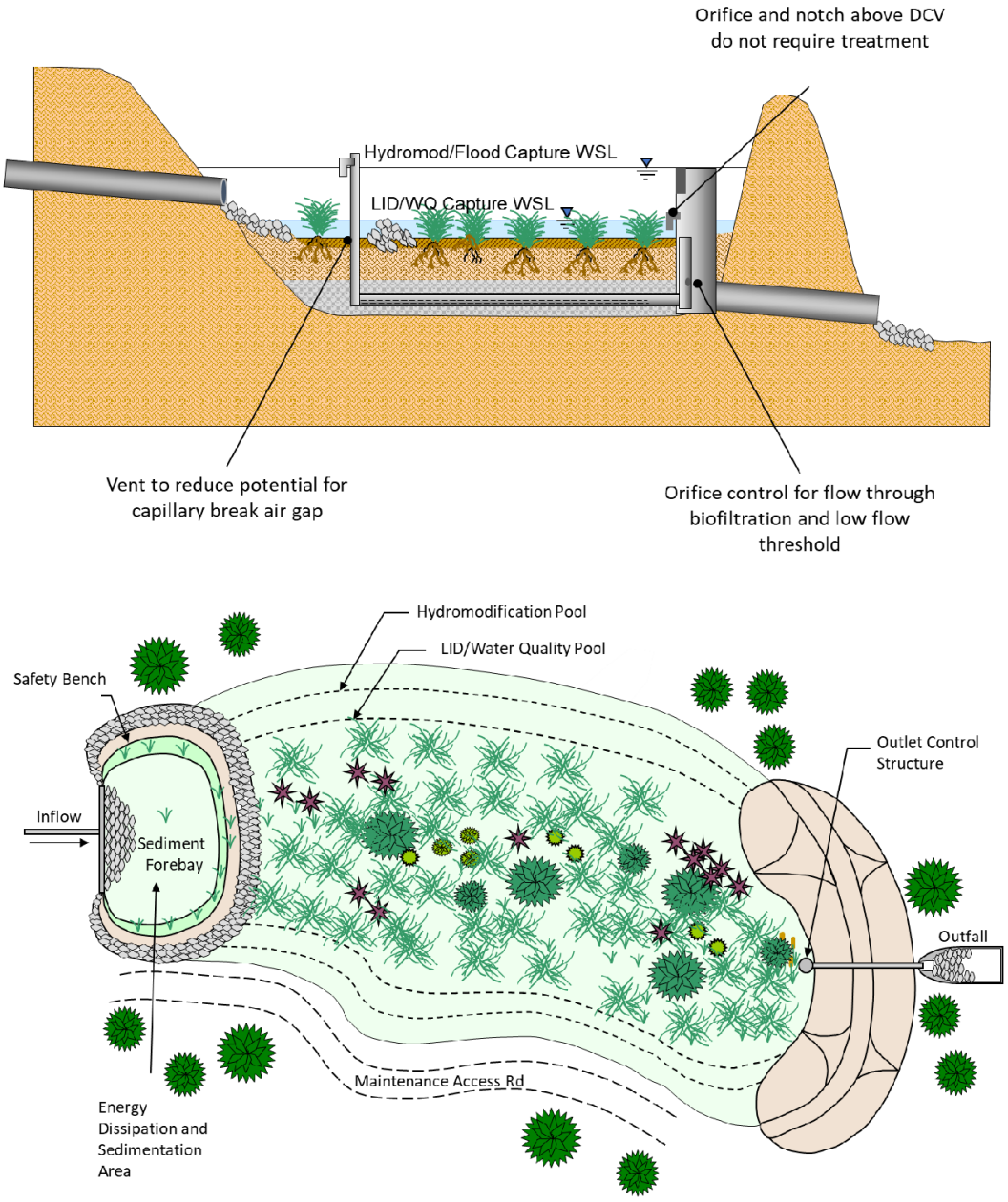
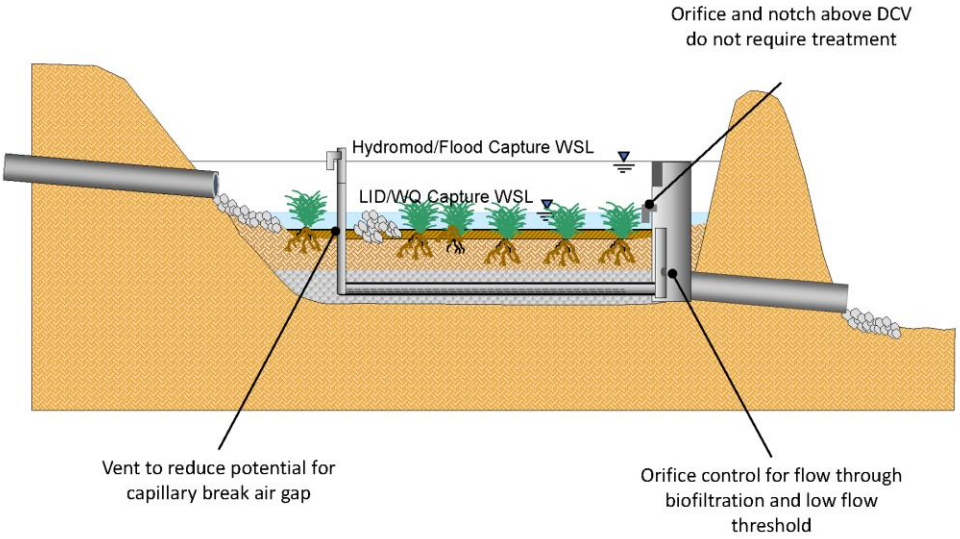
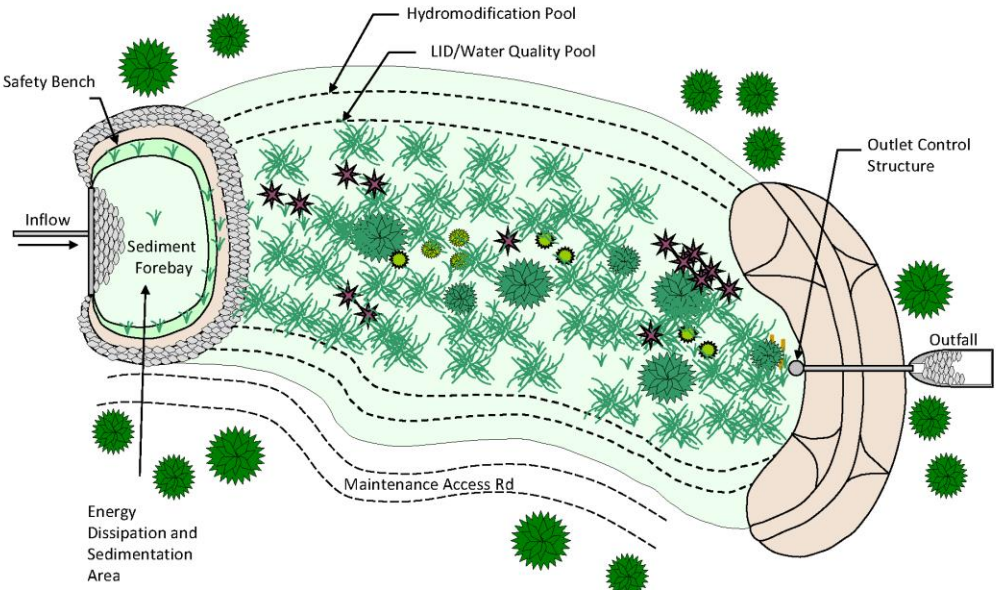


Figure 2. Example Schematic of Combination LID/Hydromodification Basin

Maintenance Access

Access for maintenance activities shall be provided as outlined in the "Basin Guidelines."


Orifice and notch above DCV
do not require treatment
Hydromod/Flood Capture WSL
LID/WQ Capture WSL
Vent to reduce potential for
capillary break air gap
Orifice control for flow through
biofiltration and low flow
threshold


Hydromodification Pool
LID/Water Quality Pool
Safety Bench
Outlet Control
Structure
Inflow
Sediment
Forebay
Outfall
Maintenance Access Rd
Energy
Dissipation and
Sedimentation
Area

2

Construction Considerations

The following factors should be considered in construction of regional facilities. These criteria are not intended to be comprehensive or replace the need for complete construction specifications consistent with standard engineering practices and applicable standards.

1. Irrigation should be considered to provide for robust plant establishment and growth and help improve long term permeability of the soil

2. Regional bioretention/biofiltration facilities should not be hydraulically connected to the storm drain system until all contributing drainage areas are stabilized (e.g., with stable vegetative cover or pavement) or are controlled with robust erosion and sediment controls. For phased projects, where interim conditions include sediment producing open space and/or graded pads that will be under construction after the facility is brought online, a high level of sediment control must be provided. It is preferred to bypass any areas that are still under construction or otherwise not stabilized.

3. To preserve and avoid the loss of infiltration capacity, the following construction guidelines should be specified:

    - Provisions address sedimentation, per above.

    - Compaction of the subgrade with heavy equipment should be minimized to the maximum extent possible. If the use of heavy equipment on the base of the facility cannot be avoided, the infiltrative capacity should be restored by tilling or aerating prior to placing the infiltrative bed.

    - If a full infiltration design is proposed, the exposed soils should be inspected by a geotechnical engineer after excavation to confirm that soil conditions are suitable.

4. Batch-level testing of bioretention soil media should be considered. For regional systems including large quantities of soil, batch level testing can help control variability between batches.

5. In-situ testing of bioretention soil media, such as with a single ring infiltrometer, should be considered on a specified interval. This can help confirm that placement methods are not resulting in significant loss of permeability.

6. The use of treated wood or galvanized metal anywhere inside the facility is prohibited.

7. As discussed above, side slopes of the basin should be well stabilized to avoid erosion onto the media bed.

8. An establishment period for vegetation should be specified in the construction plans or landscape contractor agreements.

Sizing Methodologies

In general, the sizing methods described in Fact Sheet 3.4, 3.5, and 3.6 are applicable.

Augmented Maintenance Considerations

Maintenance activities described in Fact Sheet 3.4, 3.5, and 3.6 are generally applicable. When developing the O&M Plan for regional facilities, additional consideration should be given to the scale of the regional facilities. For example:

- Maintenance may require larger or specialized equipment compared to normal bioretention/biofiltration maintenance.
- Access drive isles within the media bed may be needed. These drive isles could be reinforced with geotextiles, such as grid paver filled with gravel or BSM, to maintain permeability while supporting maintenance vehicle access.
- Methods that are allowable for maintenance may need to be specified (e.g., limitations on vehicle traffic on the media bed)
- A rotating maintenance cycle across different parts of the facility may be appropriate. This helps limit the impact to overall treatment processes when vegetation or media needs to be periodically replaced. For example, one third of the system could experience more intensive maintenance each year.

3.5 Bioretention Facility

Type of BMP	LID – Bioretention
Treatment Mechanisms	Infiltration, Evapotranspiration, Evaporation, Biofiltration
Maximum Drainage Area	This BMP is intended to be integrated into a project's landscaped area in a distributed manner. Typically, contributing drainage areas to Bioretention Facilities range from less than 1 acre to a maximum of around 10 acres.
Other Names	Rain Garden, Bioretention Cell, Bioretention Basin, Biofiltration Basin, Landscaped Filter Basin, Porous Landscape Detention

Description

Bioretention Facilities are shallow, vegetated basins underlain by an engineered soil media. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant uptake of pollutants and runoff. This keeps the Best Management Practice (BMP) from becoming clogged and allows more of the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. In most cases, the bottom of a Bioretention Facility is unlined, which also provides an opportunity for infiltration to the extent the underlying onsite soil can accommodate. When the infiltration rate of the underlying soil is exceeded, fully biotreated flows are discharged via underdrains. Bioretention Facilities therefore will inherently achieve the maximum feasible level of infiltration and evapotranspiration and achieve the minimum feasible (but highly biotreated) discharge to the storm drain system.

Siting Considerations

These facilities work best when they are designed in a relatively level area. Unlike other BMPs, Bioretention Facilities can be used in smaller landscaped spaces on the site, such as:

- ✓ Parking islands
- ✓ Medians
- ✓ Site entrances

Landscaped areas on the site (such as may otherwise be required through minimum landscaping ordinances), can often be designed as Bioretention Facilities. This can be accomplished by:

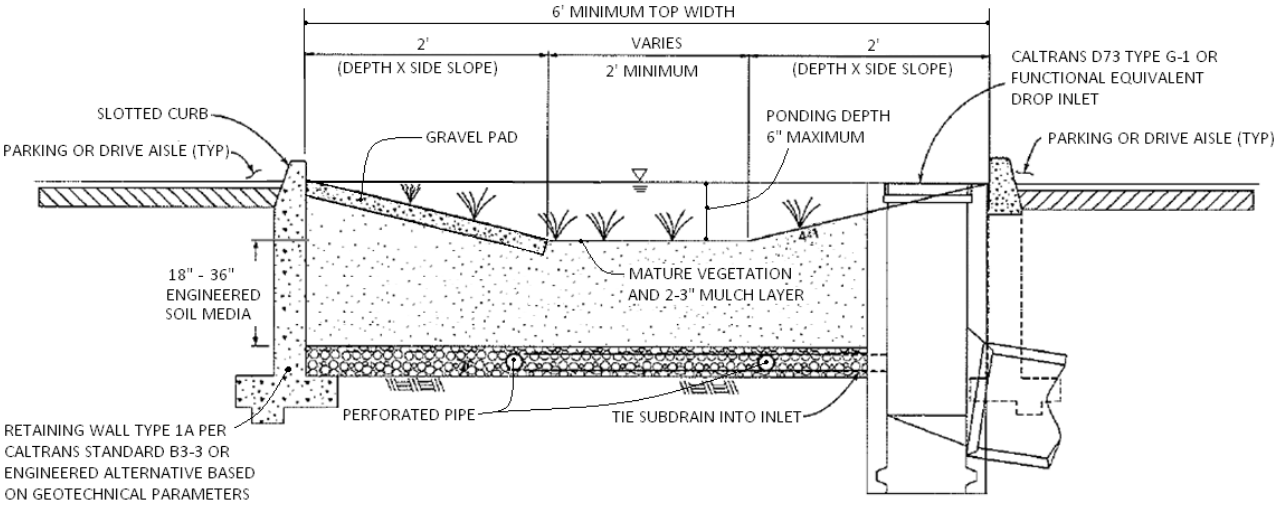
- *Depressing* landscaped areas below adjacent impervious surfaces, rather than elevating those areas
- Grading the site to direct runoff from those impervious surfaces *into* the Bioretention Facility, rather than away from the landscaping
- Sizing and designing the depressed landscaped area as a Bioretention Facility as described in this Fact Sheet

Bioretention Facilities should however not be used downstream of areas where large amounts of sediment can clog the system. Placing a Bioretention Facility at the toe of a steep slope should also be avoided due to the potential for clogging the engineered soil media with erosion from the slope, as well as the potential for damaging the vegetation.

Design and Sizing Criteria

The recommended cross section necessary for a Bioretention Facility includes:

- Vegetated area
- 18' minimum depth of engineered soil media
- 12' minimum gravel layer depth with 6' perforated pipes (added flow control features such as orifice plates may be required to mitigate for HCOC conditions)



While the 18-inch minimum engineered soil media depth can be used in some cases, it is recommended to use 24 inches or a preferred 36 inches to provide an adequate root zone for the chosen plant palate. Such a design also provides for improved removal effectiveness for nutrients. The recommended ponding depth inside of a Bioretention Facility is 6 inches; measured from the flat bottom surface to the top of the water surface as shown in Figure 1.

Because this BMP is filled with an engineered soil media, pore space in the soil and gravel layer is assumed to provide storage volume. However, several considerations must be noted:

- Surcharge storage above the soil surface (6 inches) is important to assure that design flows do not bypass the BMP when runoff exceeds the soil's absorption rate.
- In cases where the Bioretention Facility contains engineered soil media deeper than 36 inches, the pore space within the engineered soil media can only be counted to the 36-inch depth.
- A maximum of 30 percent pore space can be used for the soil media whereas a maximum of 40 percent pore space can be use for the gravel layer.

Figure 1: Standard Layout for a Bioretention Facility

Engineered Soil Media Requirements

The engineered soil media shall be comprised of 85 percent mineral component and 15 percent organic component, by volume, drum mixed prior to placement. The mineral component shall be a Class A sandy loam topsoil that meets the range specified in Table 1 below. The organic component shall be nitrogen stabilized compost[1], such that nitrogen does not leach from the media.

Table 1: Mineral Component Range Requirements

Percent Range	Component
70-80	Sand
15-20	Silt
5-10	Clay

The trip ticket, or certificate of compliance, shall be made available to the inspector to prove the engineered mix meets this specification.

Vegetation Requirements

Vegetative cover is important to minimize erosion and ensure that treatment occurs in the Bioretention Facility. The area should be designed for at least 70 percent mature coverage throughout the Bioretention Facility. To prevent the BMP from being used as walkways, Bioretention Facilities shall be planted with a combination of small trees, densely planted shrubs, and natural grasses. Grasses shall be native or ornamental; preferably ones that do not need to be mowed. The application of fertilizers and pesticides should be minimal. To maintain oxygen levels for the vegetation and promote biodegradation, it is important that vegetation not be completely submerged for any extended period of time. Therefore, a maximum of 6 inches of ponded water shall be used in the design to ensure that plants within the Bioretention Facility remain healthy.

A 2 to 3-inch layer of standard shredded aged hardwood mulch shall be placed as the top layer inside the Bioretention Facility. The 6-inch ponding depth shown in Figure 1 above shall be measured from the top surface of the 2 to 3-inch mulch layer.

Curb Cuts

To allow water to flow into the Bioretention Facility, 1-foot-wide (minimum) curb cuts should be placed approximately every 10 feet around the perimeter of the Bioretention Facility. Figure 2 shows a curb cut in a Bioretention Facility. Curb cut flow lines must be at or above the V_{BMP} water surface level.

[1] For more information on compost, visit the US Composting Council website at: http://compostingcouncil.org/

Figure 2: Curb Cut located in a Bioretention Facility

To reduce erosion, a gravel pad shall be placed at each inlet point to the Bioretention Facility. The gravel should be 1- to 1.5-inch diameter in size. The gravel should overlap the curb cut opening a minimum of 6 inches. The gravel pad inside the Bioretention Facility should be flush with the finished surface at the curb cut and extend to the bottom of the slope.

In addition, place an apron of stone or concrete, a foot square or larger, inside each inlet to prevent vegetation from growing up and blocking the inlet. See Figure 3.

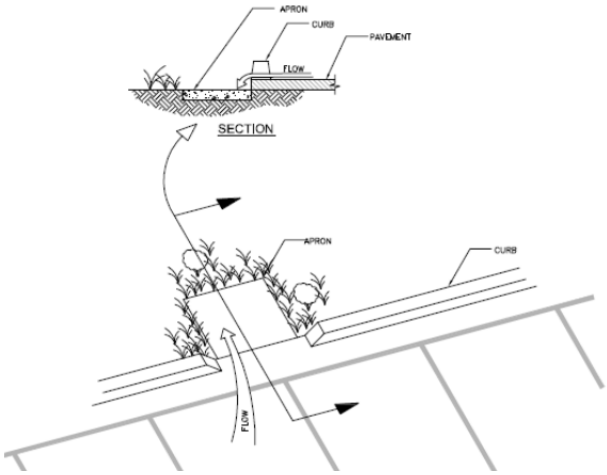


Figure 3: Apron located in a Bioretention Facility

Terracing the Landscaped Filter Basin

It is recommended that Bioretention Facilities be level. In the event the facility site slopes and lacks proper design, water would fill the lowest point of the BMP and then discharge from the basin without being treated. To ensure that the water will be held within the Bioretention Facility on sloped sites, the BMP must be terraced with nonporous check dams to provide the required storage and treatment capacity.

The terraced version of this BMP shall be used on non-flat sites with no more than a 3 percent slope. The surcharge depth cannot exceed 0.5 feet, and side slopes shall not exceed 4:1. Table 2 below shows the spacing of the check dams, and slopes shall be rounded up (i.e., 2.5 percent slope shall use 10' spacing for check dams).

Table 2: Check Dam Spacing

6” Check Dam Spacing	
Slope	**Spacing**
1%	*25'*
2%	*15'*
3%	*10'*

Roof Runoff

Roof downspouts may be directed towards Bioretention Facilities. However, the downspouts must discharge onto a concrete splash block to protect the Bioretention Facility from erosion.

Retaining Walls

It is recommended that Retaining Wall Type 1A, per Caltrans Standard B3-3 or equivalent, be constructed around the entire perimeter of the Bioretention Facility. This practice will protect the sides of the Bioretention Facility from collapsing during construction and maintenance or from high service loads adjacent to the BMP. Where such service loads would not exist adjacent to the BMP, an engineered alternative may be used if signed by a licensed civil engineer.

Side Slope Requirements

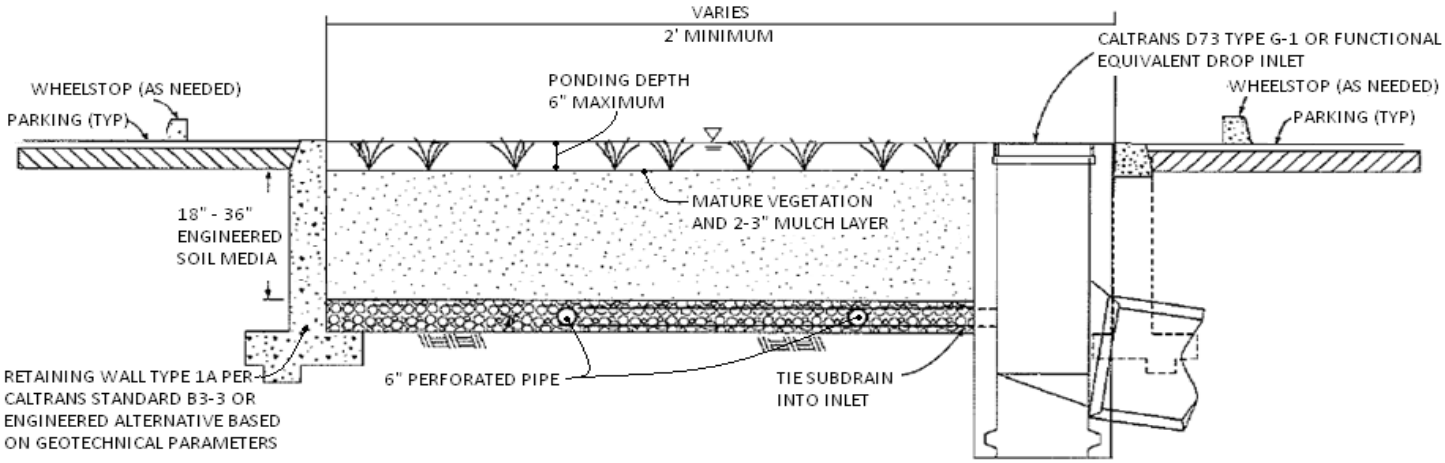
Bioretention Facilities Requiring Side Slopes

The design should assure that the Bioretention Facility does not present a tripping hazard. Bioretention Facilities proposed near pedestrian areas, such as areas parallel to parking spaces or along a walkway, must have a gentle slope to the bottom of the facility. Side slopes inside of a Bioretention Facility shall be 4:1. A typical cross section for the Bioretention Facility is shown in Figure 1.

Bioretention Facilities Not Requiring Side Slopes

Where cars park perpendicular to the Bioretention Facility, side slopes are not required. A 6-inch maximum drop may be used, and the Bioretention Facility must be planted with trees and shrubs to prevent pedestrian access. In this case, a curb is not placed around the Bioretention Facility,

but wheel stops shall be used to prevent vehicles from entering the Bioretention Facility, as shown in Figure 4.



Planter Boxes

Bioretention Facilities can also be placed above ground as planter boxes. Planter boxes must have a minimum width of 2 feet, a maximum surcharge depth of 6 inches, and no side slopes are necessary. Planter boxes must be constructed so as to ensure that the top surface of the engineered soil media will remain level. This option may be constructed of concrete, brick, stone or other stable materials that will not warp or bend. Chemically treated wood or galvanized steel, which has the ability to contaminate stormwater, should not be used. Planter boxes must be lined with an impermeable liner on all sides, including the bottom. Due to the impermeable liner, the inside bottom of the planter box shall be designed and constructed with a cross fall, directing treated flows within the subdrain layer toward the point where subdrain exits the planter box, and subdrains shall be oriented with drain holes oriented down. These provisions will help avoid excessive stagnant water within the gravel underdrain layer. Similar to the in-ground Bioretention Facility versions, this BMP benefits from healthy plants and biological activity in the root zone. Planter boxes should be planted with appropriately selected vegetation.

Figure 5: Planter Box
Source: LA Team Effort

Overflow

An overflow route is needed in the Bioretention Facility design to bypass stored runoff from storm events larger than V_{BMP} or in the event of facility or subdrain clogging. Overflow systems must connect to an acceptable discharge point, such as a downstream conveyance system as shown in Figure 1 and Figure 4. The inlet to the overflow structure shall be elevated inside the Bioretention Facility to be flush with the ponding surface for the design capture volume (V_{BMP}) as shown in Figure 4. This will allow the design capture volume to be fully treated by the Bioretention Facility, and for larger events to safely be conveyed to downstream systems. The overflow inlet shall **not** be located in the entrance of a Bioretention Facility, as shown in Figure 6.

Underdrain Gravel and Pipes

An underdrain gravel layer and pipes shall be provided in accordance with Appendix B – Underdrains.

Figure 6: Incorrect Placement of an Overflow Inlet.

Inspection and Maintenance Schedule

The Bioretention Facility area shall be inspected for erosion, dead vegetation, soggy soils, or standing water. The use of fertilizers and pesticides on the plants inside the Bioretention Facility should be minimized.

Schedule	Activity
Ongoing	• Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance activities. • Remove trash and debris • Replace damaged grass and/or plants • Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
After storm events	• Inspect areas for ponding
Annually	• Inspect/clean inlets and outlets

Bioretention Facility Design Procedure

1) Enter the area tributary, A_T, to the Bioretention Facility.

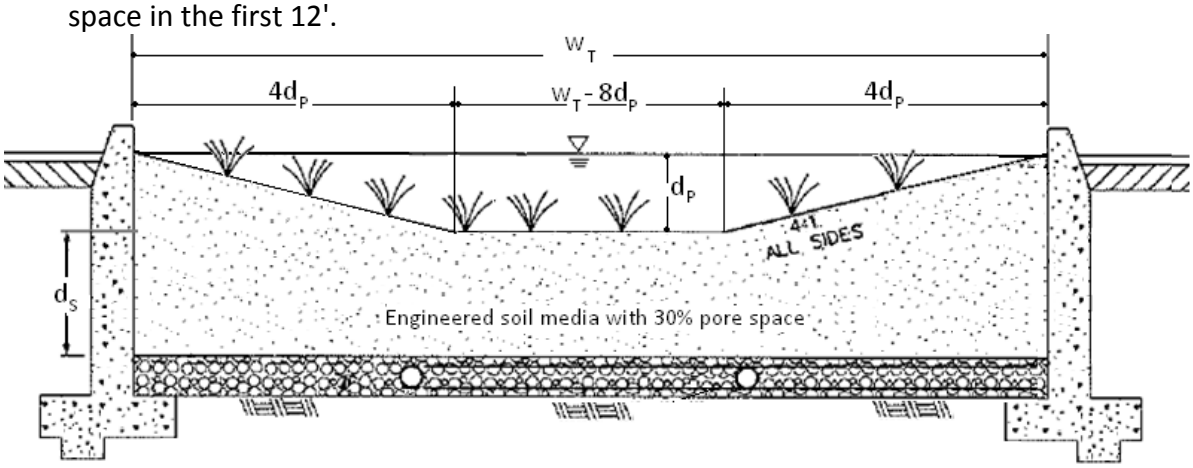
2) Enter the Design Volume, V_{BMP}, determined from Section 2.1 of this Handbook.

3) Select the type of design used. There are two types of Bioretention Facility designs: the standard design used for most project sites that include side slopes, and the modified design used when the BMP is located perpendicular to the parking spaces or with planter boxes that do not use side slopes.

4) Enter the depth of the engineered soil media, d_S. The minimum depth for the engineered soil media can be 18' in limited cases, but it is recommended to use 24' or a preferred 36' to provide an adequate root zone for the chosen plant palette. Engineered soil media deeper than 36' will only get credit for the pore space in the first 36'.

5) Enter the top width of the Bioretention Facility.

6) Calculate the total effective depth, d_E, within the Bioretention Facility. The maximum allowable pore space of the soil media is 30% while the maximum allowable pore space for the gravel layer is 40%. Gravel layer deeper than 12' will only get credit for the pore space in the first 12'.



a. For the design with side slopes the following equation shall be used to determine the total effective depth. Where, d_P is the depth of ponding within the basin.

$$d_E(\text{ft}) = \frac{0.3 \times \left[\left(w_T(\text{ft}) \times d_S(\text{ft})\right) + 4\left(d_P(\text{ft})\right)^2\right] + 0.4 \times 1(\text{ft}) + d_P(\text{ft})\left[4d_P(\text{ft}) + \left(w_T(\text{ft}) - 8d_P(\text{ft})\right)\right]}{w_T(\text{ft})}$$

This above equation can be simplified if the maximum ponding depth of 0.5' is used. The equation below is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = (0.3 \times d_S(\text{ft}) + 0.4 \text{ x } 1(\text{ft})) - \left(\frac{0.7\ (\text{ft}^2)}{w_T(\text{ft})}\right) + 0.5(\text{ft})$$

b. For the design without side slopes the following equation shall be used to determine the total effective depth:

$$d_E(\text{ft}) = d_P(\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

The equation below, using the maximum ponding depth of 0.5', is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = 0.5\ (\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

7) Calculate the minimum surface area, A_M, required for the Bioretention Facility. This does not include the curb surrounding the Bioretention Facility or side slopes.

$$A_M(\text{ft}^2) = \frac{V_{BMP}(\text{ft}^3)}{d_E\ (\text{ft})}$$

8) Enter the proposed surface area. This area shall not be less than the minimum required surface area.

9) Verify that side slopes are no steeper than 4:1 in the standard design, and are not required in the modified design.

10) Provide the diameter, minimum 6 inches, of the perforated underdrain used in the Bioretention Facility. See Appendix B for specific information regarding perforated pipes.

11) Provide the slope of the site around the Bioretention Facility, if used. The maximum slope is 3 percent for a standard design.

12) Provide the check dam spacing, if the site around the Bioretention Facility is sloped.

13) Describe the vegetation used within the Bioretention Facility.

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CONTECH®
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Contech® CMP Detention & Infiltration Maintenance Guide

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CMP DETENTION SYSTEMS

Maintenance

Underground storm water detention and retention systems should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size or configuration of the system.

Inspection

Inspection is the key to effective maintenance and is easily performed. CONTECH recommends ongoing quarterly inspections of the accumulated sediment. Sediment deposition and transport may vary from year to year and quarterly inspections will help insure that systems are cleaned out at the appropriate time. Inspections should be performed more often in the winter months in climates where sanding operations may lead to rapid accumulations, or in equipment washdown areas. It is very useful to keep a record of each inspection. A sample inspection log is included for your use.

Systems should be cleaned when inspection reveals that accumulated sediment or trash is clogging the discharge orifice. CONTECH suggests that all systems be designed with an access/inspection manhole situated at or near the inlet and the outlet orifice. Should it be necessary to get inside the system to perform maintenance activities, all appropriate precautions regarding confined space entry and OSHA regulations should be followed.

Cleaning

Maintaining an underground detention or retention system is easiest when there is no flow entering the system. For this reason, it is a good idea to schedule the cleanout during dry weather.

Accumulated sediment and trash can typically be evacuated through the manhole over the outlet orifice. If maintenance is not performed as recommended, sediment and trash may accumulate in front of the outlet orifice. Manhole covers should be securely seated following cleaning activities.

Inspection & Maintenance Log Sample Template

_____" Diameter System			Location: Anywhere, USA		
Date	**Depth of Sediment**	**Accumulated Trash**	**Maintenance Performed**	**Maintenance Personnel**	**Comments**
12/01/10	2"	None	Removed Sediment	B. Johnson	Installed
03/01/11	1"	Some	Removed Sediment and Trash	B. Johnson	Swept parking lot
06/01/11	0"	None	None		
09/01/11	0"	Heavy	Removed Trash	S. Riley	
12/01/11	1"	None	Removed Sediment	S. Riley	
04/01/12	0"	None	None	S. Riley	
04/15/01	2	Some	Removed Sediment and Trash	ACE Environmental Services	

SAMPLE

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Support

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Site-specific support is available from our engineers.

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UNITED STORM WATER CPS

Connector Pipe Screen

Technical Manual

Manufacturer, Supplier, and Service Information

Manufacturer:

United Storm Water, Inc.
14000 E. Valley Blvd
City of Industry, Ca 91746
Phone: 626-890-7027
Fax: 626-961-3166
Contact: Eugene Hernandez

Supplier:

United Storm Water, Inc.
14000 E. Valley Blvd
City of Industry, Ca 91746
Phone: 626-419-3521
Fax: 626-961-3166
Contact: Terry Flury

For all spare parts and service, Contact:

United Storm Water, Inc.
14000 E. Valley Blvd.
City of Industry, Ca 91746
Contact: Eugene Hernandez

2/25/2014

United Storm Water, Inc. CPS Technical Manual

United Storm Water, Inc. Connector Pipe Screen Installation Instructions:

1. Bring the CPS unit into the catch basin and set in front of outlet hole. The unit has 3 components, deflector, (2) "Z" panels, and the front of the screen, depending on the size of the catch basin opening. Establish a definite location for your first "Z" Panel and then mark your holes for drilling. Do the same for your second Panel.

2. Remove the CPS unit from the installation wall. Drill 3/8" holes where you marked. Make sure to drill straight into the catch basin wall to avoid mounting difficulties.

3. Hammer 3/8"x3.75" stainless steel anchor bolts into the holes.

4. After all of the anchor bolts are hammered into place, attach the "Z" panels.

5. Deflector device. Measure and cut a length of deflector stock same length as CPS unit. Make cuts using a compact grinder. Be sure to "grind smooth any sharp edges. Place directly above the CPS device. Next, mark and drill 3/8"x3.75" holes.

6. Make cuts using a compact grinder. Be sure to stand off any sharp edges.

7. Once the "Z" Panels have been custom cut to conform to the catch basin surface, attach the panels to the body of the CPS unit using the self drilling screws provided.

8. Scribe and cut the bottom of the front panel to conform to the catch basin bottom surface, then attach the front panel to the 2 "Z" panels using the self drilling screws provided.

9. Attach legs (1"x1" perforated angle) from top corners of deflector to top corners of CPS device. Secure with bolts provided.

10. Tighten all bolts to assure a tight fit.

Preventative Maintenance:

Maintenance crews should regularly check catch basins and establish a maintenance schedule based on the level of debris collected. Some areas will require more frequent cleaning than others. Catch basins should be cleared of debris to allow for water to freely flow through the screen.

Pressure-washing the unit may additionally benefit but is not necessary.

Yearly Maintenance Schedule:

Visual Inspection:

1. Built-up debris and foreign object debris can hinder the unit's operation. Remove any visible debris that may be on, in front of, and nearby the unit.
2. Look for any visible signs of vandalism or damage that may compromise the unit's ability to properly function. Attempted vandalism and slight damage should be inspected closely to ensure no future damage may result.

Replacement Schedule:

All components on United Storm Water Connector Pipe Screen are made from 304 stainless steel parts. United Storm Water, Inc. should be notified if a replacement if required.

Tools Required:

For removal of United Storm Water Connector Pipe Screen, use a 3/8" socket wrench to loosen the nuts on the anchor bolts. A socket extension may be needed for hard to reach areas.

Disassembly and Reassembly:

For removal of United Storm Water Connector Pipe Screen, use a 9/16" socket wrench to loosen the nuts on the anchor bolts. A socket extension may be needed for hard to reach areas. Carefully remove the unit once all bolts have been loosening. Realign the unit on the anchor and tighten the bolts for reassembly.

For removal of the Deflector United Storm Water Connector Pipe Screen, use a 9/16 socket wrench to loosen the nuts anchor bolts. Realign the bypass section and tighten the screws for reassembly.

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CDS® Inspection and Maintenance Guide

CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.

CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	yd3	m3
CDS2015-4	4	1.2	3.0	0.9	0.5	0.4
CDS2015	5	1.5	3.0	0.9	1.3	1.0
CDS2020	5	1.5	3.5	1.1	1.3	1.0
CDS2025	5	1.5	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

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CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

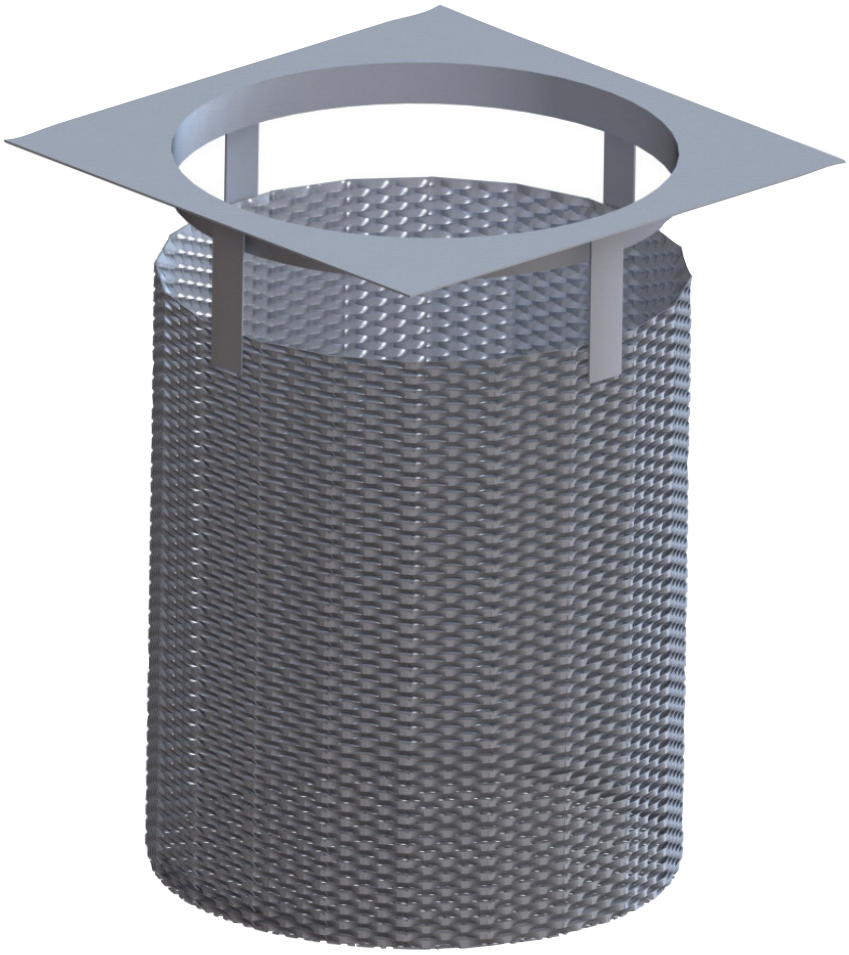
1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

Grate Inlet Filter

Bio Clean
A Forterra Company

OPERATION & MAINTENANCE



Bio Clean Environmental Services, Inc.
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Oceanside, CA 92058

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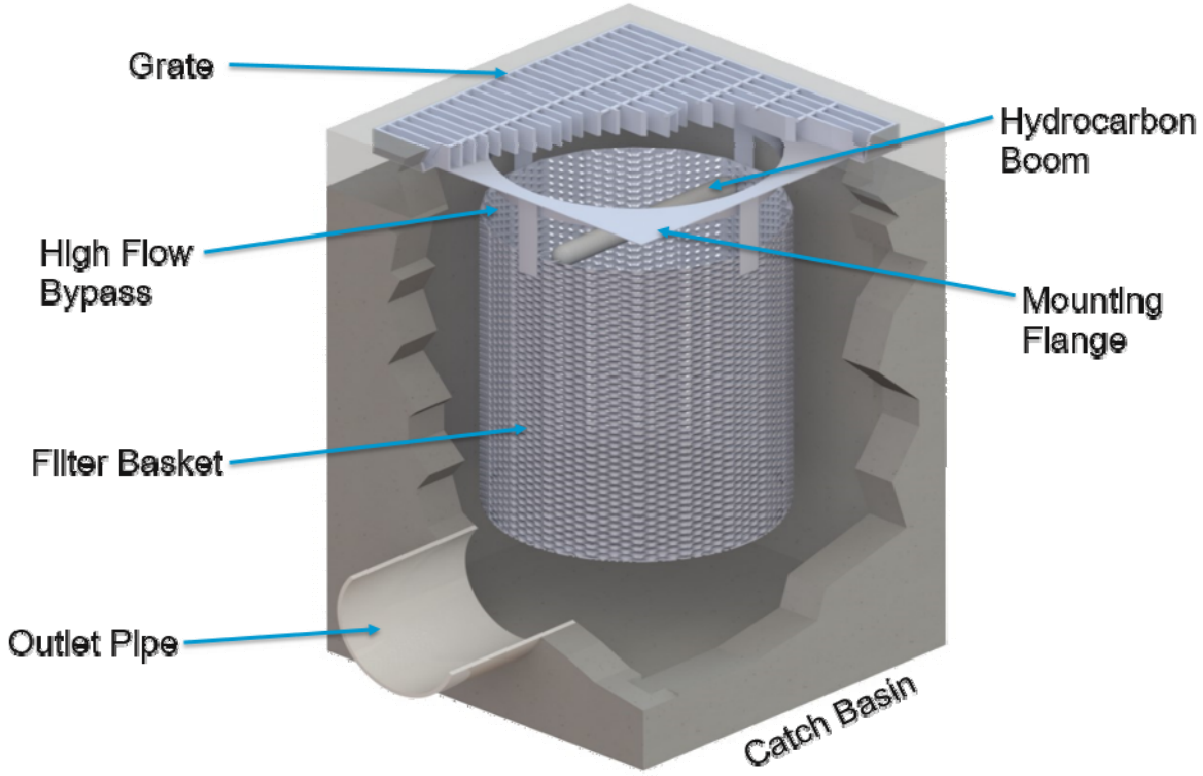
OPERATION & MAINTENANCE

The Bio Clean Grate Inlet Filter is a stormwater device designed to remove high levels of trash, debris, sediments and hydrocarbons. The filter is available in several configurations including trash full capture, multi-level screening, Kraken membrane filter and media filter variations. This manual covers maintenance procedures of the trash full capture and multi-level screening configurations. A supplemental manual is available for the Kraken and media filter variations. This filter is made of 100% stainless steel and is available and various sizes and depths allowing it to fit in any grated catch basin inlet. The filters heavy duty construction allows for cleaning with any vacuum truck. The filet can also easily be cleaned by hand.

As with all stormwater BMPs, inspection and maintenance on the Grate Inlet Filter is necessary. Stormwater regulations require BMPs be inspected and maintained to ensure they are operating as designed to allow for effective pollutant removal and provide protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess site-specific loading conditions. This is recommended because pollutant loading can vary greatly from site to site. Variables such as nearby soil erosion or construction sites, winter sanding of roads, amount of daily traffic and land use can increase pollutant loading on the system. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years. Without appropriate maintenance a BMP can exceed its storage capacity which can negatively affect its continued performance in removing and retaining captured pollutants.



System Diagram:

Inspection Equipment

Following is a list of equipment to allow for simple and effective inspection of the Grate Inlet Filter:

- Bio Clean Environmental Inspection Form (contained within this manual).
- Manhole hook or appropriate tools to remove access hatches and covers.
- Appropriate traffic control signage and procedures.
- Protective clothing and eye protection.
- Note: entering a confined space requires appropriate safety and certification. It is generally not required for routine inspections or maintenance of the system.

Inspection Steps

The core to any successful stormwater BMP maintenance program is routine inspections. The inspection steps required on the Grate Inlet Filter are quick and easy. As mentioned above the first year should be seen as the maintenance interval establishment phase. During the first year more frequent inspections should occur in order to gather loading data and maintenance requirements for that specific site. This information can be used to establish a base for long-term inspection and maintenance interval requirements.

The Grate Inlet Filter can be inspected though visual observation. All necessary pre-inspection steps must be carried out before inspection occurs, such as safety measures to protect the inspector and nearby pedestrians from any dangers associated with an open grated inlet. Once the grate has been safely removed the inspection process can proceed:

- Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other info (see inspection form).
- Observe the filter with the grate removed.
- Look for any out of the ordinary obstructions on the grate or in the filter and its bypass. Write down any observations on the inspection form.
- Through observation and/or digital photographs estimate the amount of trash, foliage and sediment accumulated inside the filter basket. Record this information on the inspection form.
- Observe the condition and color of the hydrocarbon boom. Record this information on the inspection form.
- Finalize inspection report for analysis by the maintenance manager to determine if maintenance is required.

Maintenance Indicators

Based upon observations made during inspection, maintenance of the system may be required based on the following indicators:

- Missing or damaged internal components.
- Obstructions in the filter basket and its bypass.
- Excessive accumulation of trash, foliage and sediment in the filter basket. Maintenance is required when the basket is greater than half-full.
- The following chart shows the 50% and 100% storage capacity of each filter height:

Model	Filter Basket Diameter (in)	Filter Basket Height (in)	50% Storage Capacity (cu ft)	100% Storage Capacity (cu ft)
BC-GRATE-12-12-12	10.00	12.00	0.27	0.55
BC-GRATE-18-18-18	16.00	18.00	1.05	2.09
BC-GRATE-24-24-24	21.00	24.00	2.41	4.81
BC-GRATE-30-30-24	27.00	24.00	3.98	7.95
BC-GRATE-36-36-24	33.00	24.00	5.94	11.88
BC-GRATE-48-48-18	44.00	18.00	7.92	15.84

Maintenance Equipment

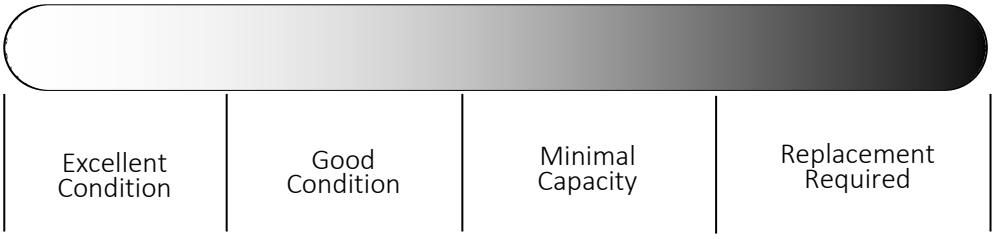
It is recommended that a vacuum truck be utilized to minimize the time required to maintain the Curb Inlet Filter, though it can easily cleaned by hand:

- Bio Clean Environmental Maintenance Form (contained in O&M Manual).
- Manhole hook or appropriate tools to remove the grate.
- Appropriate safety signage and procedures.
- Protective clothing and eye protection.
- Note: entering a confined space requires appropriate safety and certification. It is generally not required for routine maintenance of the system. Small or large vacuum truck (with pressure washer attachment preferred).

Maintenance Procedures

It is recommended that maintenance occurs at least two days after the most recent rain event to allow debris and sediments to dry out. Maintaining the system while flows are still entering it will increase the time and complexity required for maintenance. Cleaning of the Grate Inlet Filter can be performed utilizing a vacuum truck. Once all safety measures have been set up cleaning of the Grate Inlet Filter can proceed as followed:

- Remove grate (traffic control and safety measures to be completed prior).
- Using an extension on a vacuum truck position the hose over the opened catch basin. Insert the vacuum hose down into the filter basket and suck out trash, foliage and sediment. A pressure wash is recommended and will assist in spraying of any debris stuck on the side or bottom of the filter basket. Power wash off the filter basket sides and bottom.
- Next remove the hydrocarbon boom that is attached to the inside of the filter basket. The hydrocarbon boom is fastened to rails on two opposite sides of the basket (vertical rails). Assess the color and condition of the boom using the following information in the next bullet point. If replacement is required install and fasten on a new hydrocarbon boom. Booms can be ordered directly from the manufacturer.
- Follow is a replacement indication color chart for the hydrocarbon booms:



- The last step is to replace the grate and remove all traffic control.
- All removed debris and pollutants shall be disposed of following local and state requirements.
- Disposal requirements for recovered pollutants may vary depending on local guidelines. In most areas the sediment, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste.
- In the case of damaged components, replacement parts can be ordered from the manufacturer. Hydrocarbon booms can also be ordered directly from the manufacturer as previously noted.

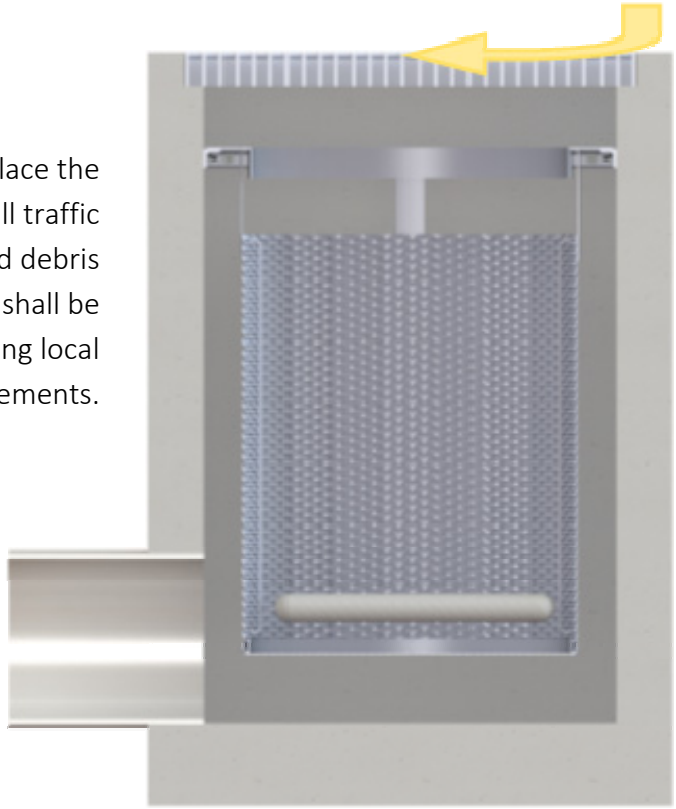
Maintenance Sequence

Remove grate and set up vacuum truck to clean the filter basket.

Insert the vacuum hose down into the filter basket and suck out debris. Use a pressure washer to assist in vacuum removal. Pressure wash off screens.

Remove the hydrocarbon boom that is attached to the inside of the filter basket. The hydrocarbon boom is fastened to rails on two opposite sides of the basket (vertical rails). Assess the color and condition of the boom using the following information in the next bullet point. If replacement is required install and fasten on a new hydrocarbon boom.

Close up and replace the grate and remove all traffic control. All removed debris and pollutants shall be disposed of following local and state requirements.



For Maintenance Services or Information Please Contact Us At:
760-433-7640
Or Email:
info@biocleanenvironmental.com

Bio Clean
A Forterra Company

Inspection and Maintenance Report
Catch Basin Only

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ____/____/_____ Time _____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ ☐

Weather Condition _____ Additional Notes _____

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Insert	Catch Basin Size	Evidence of Illicit Discharge?	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Signs of Structural Damage?	Functioning Properly or Maintenance Needed?
1	Lat: Long:							
2	Lat: Long:							
3	Lat: Long:							
4	Lat: Long:							
5	Lat: Long:							
6	Lat: Long:							
7	Lat: Long:							
8	Lat: Long:							
10	Lat: Long:							
11	Lat: Long:							
12	Lat: Long:							

Comments:

Non-Stormwater Discharges SC-10

Description

Non-stormwater discharges (NSWDs) are flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain if local regulations allow. 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: potable water sources, fire hydrant flushing, air conditioner condensate, landscape irrigation drainage and landscape watering, emergency firefighting, etc. as discussed in Section 2.

However there are certain non-stormwater discharges that pose an environmental concern. These discharges may originate from illegal dumping of industrial material or wastes and illegal connections such as internal floor drains, appliances, industrial processes, sinks, and toilets that are illegally connected to the nearby storm drainage system through on-site drainage and piping. These unauthorized discharges (examples of 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.

Non-stormwater discharges will need to be addressed through a combination of detection and elimination. The ultimate goal is to effectively eliminate unauthorized non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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pollutants on streets and into the storm drain system and downstream water bodies.

Approach

Initially the Discharger 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 the elimination of unauthorized non-stormwater discharges. See other BMP Fact Sheets for activity-specific pollution prevention procedures.

General Pollution Prevention Protocols

- Implement waste management controls described in SC-34 Waste Handling and Disposal.
- 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" or similar stenciled or demarcated next to them to warn against ignorant or unintentional dumping of pollutants into the storm drainage system.
- Manage and control sources of water such as hose bibs, faucets, wash racks, irrigation heads, etc. Identify hoses and faucets in the SWPPP, and post signage for appropriate use.

Non-Stormwater Discharge Investigation Protocols

Identifying the sources of non-stormwater discharges requires the Discharger to conduct an investigation of the facility at regular intervals. There are several categories of non-stormwater discharges:

- Visible, easily identifiable discharges, typically generated as surface runoff, such as uncontained surface runoff from vehicle or equipment washing; and
- Non-visible, (e.g., subsurface) discharges into the site drainage system through a variety of pathways that are not obvious.

The approach to detecting and eliminating non-stormwater discharges will vary considerably, as discussed below:

Visible and identifiable discharges

- Conduct routine inspections of the facilities and of each major activity area and identify visible evidence of unauthorized non-stormwater discharges. This may include:
  - ✓ Visual observations of actual discharges occurring;

- ✓ Evidence of surface staining, discoloring etc. that indicates that discharges have occurred;
- ✓ Pools of water in low lying areas when a rain event has not occurred; and
- ✓ Discussions with operations personnel to understand practices that may lead to unauthorized discharges.

- ☐ If evidence of non-stormwater discharges is discovered:
  - ✓ Document the location and circumstances using Worksheets 5 and 6 (Section 2 of the manual), including digital photos;
  - ✓ Identify and implement any quick remedy or corrective action (e.g., moving uncovered containers inside or to a proper location); and
  - ✓ Develop a plan to eliminate the discharge. Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge.
- ☐ Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge. Make sure the facility SWPPP is up-to-date and includes applicable BMPs to address the non-stormwater discharge.

Other Illegal Discharges (Non visible)

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 discharges to the 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.
  - ✓ 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 loading/unloading area drain inlets and floor drains in older buildings.

- Never assume storm drains are connected to the sanitary sewer system.

Monitoring for investigation/detection of illegal discharges

- If a suspected illegal or unknown discharge is detected, monitoring of the discharge may help identify the content and/or suggest the source. This may be done with a field screening analysis, flow meter measurements, or by collecting a sample for laboratory analysis. Section 5 and Appendix D describe the necessary field equipment and procedures for field investigations.

- Investigative monitoring may be conducted over time. For example if, a discharge is intermittent, then monitoring might be conducted to determine the timing of the discharge to determine the source.

- Investigative monitoring may be conducted over a spatial area. For example, if a discharge is observed in a pipe, then monitoring might be conducted at accessible upstream locations in order to pinpoint the source of the discharge.

- Generally, investigative monitoring requiring collection of samples and submittal for lab analysis requires proper planning and specially trained staff.

Smoke Testing

Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two piping systems. Smoke testing is generally performed at a downstream location and the smoke is forced upstream using blowers to create positive pressure. The advantage to smoke testing is that it can potentially identify multiple potential discharge sources at once.

- Smoke testing uses a harmless, non-toxic smoke cartridges developed specifically for this purpose.

- Smoke testing requires specialized equipment (e.g., cartridges, blowers) and is generally only appropriate for specially trained staff.

- A Standard Operating Procedure (SOP) for smoke testing is highly desirable. The SOP should address the following elements:

  - ✓ Proper planning and notification of nearby residents and emergency services is necessary since introducing smoke into the system may result in false alarms;

  - ✓ During dry weather, the stormwater collection system is filled with smoke and then traced back to sources;

- ✓ Temporary isolation of segments of pipe using sand bags is often needed to force the smoke into leaking pipes; and
- ✓ The appearance of smoke in a waste vent pipe, at a sewer manhole, or even the base of a toilet indicates that there may be a connection between the sanitary and storm water systems.

- ☐ Most municipal wastewater agencies will have necessary staff and equipment to conduct smoke testing and they should be contacted if cross connections with the sanitary sewer are suspected. See SC-44 Drainage System Maintenance for more information.

Dye Testing

- ☐ Dye testing is typically performed when there is a suspected specific pollutant source and location (i.e., leaking sanitary sewer) and there is evidence of dry weather flows in the stormwater collection system.
- ☐ Dye is released at a probable upstream source location, either the facility's sanitary or process wastewater system. The dye must be released with a sufficient volume of water to flush the system.
- ☐ Operators then visually examine the downstream discharge points from the stormwater collection system for the presence of the dye.
- ☐ Dye testing can be performed informally using commercially available products in order to conduct an initial investigation for fairly obvious cross-connections.
- ☐ More detailed dye testing should be performed by properly trained staff and follow SOPs. Specialized equipment such as fluorometers may be necessary to detect low concentrations of dye.
- ☐ Most municipal wastewater agencies will have necessary staff and equipment to conduct dye testing and they should be contacted if cross connections with the sanitary sewer are suspected.

TV Inspection of Drainage System

- ☐ Closed Circuit Television (CCTV) can be employed to visually identify illicit connections to the industrial storm drainage system. Two types of CCTV systems are available: (1) a small specially designed camera that can be manually pushed on a stiff cable through storm drains to observe the interior of the piping, or (2) a larger remote operated video camera on treads or wheels that can be guided through storm drains to view the interior of the pipe.
- ☐ CCTV systems often include a high-pressure water jet and camera on a flexible cable. The water jet cleans debris and biofilm off the inside of pipes so the camera can take video images of the pipe condition.

- CCTV units can detect large cracks and other defects such as offsets in pipe ends caused by root intrusions or shifting substrate.
- CCTV can also be used to detect dye introduced into the sanitary sewer.
- CCTV inspections require specialized equipment and properly trained staff and are generally best left to specialized contractors or municipal public works staff.

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks may include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. These wastes can 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);
  - ✓ An anonymous tip/reporting mechanism; and
  - ✓ Evidence of responsible parties (e.g., tagging, encampments, etc.).
- 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.

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 SC-11 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.

Spill and Leak Prevention and Response

- 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.
- See SC-11 Spill Prevention Control and Cleanup.

Employee Training Program

- Training of technical staff in identifying and documenting illegal dumping incidents is required. The frequency of training must be presented in the SWPPP, and depends on site-specific industrial materials and activities.
- Consider posting a 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. Employees should be able to identify work/jobs with high potential for spills and suggest methods to reduce possibility.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.

- Conduct spill response drills annually (if no events occurred) in order to evaluate the effectiveness of the plan.
- When a responsible party is identified, educate the party on the impacts of his or her actions.

Quality Assurance and Record Keeping

Performance Evaluation

- Annually review 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.
- Develop document and data management procedures.
- 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.
- Annually document and report the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.
- Document training activities.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Many facilities do not have accurate, up-to-date 'as-built' plans or drawings which may be necessary in order to conduct non-stormwater discharge assessments.
  - ✓ Online tools such as Google Earth™ can provide an aerial view of the facility and may be useful in understanding drainage patterns and potential sources of non-stormwater discharges
  - ✓ Local municipal jurisdictions may have useful drainage systems maps.

- Video surveillance cameras are commonly used to secure the perimeter of industrial facilities against break-ins and theft. These surveillance systems may also be useful for capturing illegal dumping activities. Minor, temporary adjustments to the field of view of existing surveillance camera systems to target known or suspected problem areas may be a cost-effective way of capturing illegal dumping activities and identifying the perpetrators.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital facility cost requirements may be minimal unless cross-connections to storm drains are detected.
- Indoor floor drains may require re-plumbing if cross-connections are detected.
- Leaky sanitary sewers will require repair or replacement which can have significant costs depending on the size and industrial activity at the facility.

Maintenance (including administrative and staffing)

- The primary effort is for staff time and depends on how aggressively a program is implemented.
- Costs for containment, and disposal of any leak or discharge is borne by the Discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Permit Requirements

The IGP authorizes certain Non-Storm Water Discharges (NSWDs) provided BMPs are included in the SWPPP and implemented to:

- Reduce or prevent the contact of authorized NSWDs with materials or equipment that are potential sources of pollutants;
- Reduce, to the extent practicable, the flow or volume of authorized NSWDs;
- Ensure that authorized NSWDs do not contain quantities of pollutants that cause or contribute to an exceedance of a water quality standards (WQS); and,

- Reduce or prevent discharges of pollutants in authorized NSWDs in a manner that reflects best industry practice considering technological availability and economic practicability and achievability."

References and Resources

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Sacramento Stormwater Management Program, *Best Management Practices for Industrial Storm Water Pollution Control*, Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

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Spill Prevention, Control & Cleanup SC-11

Description

Many activities that occur at an industrial or commercial site have the potential to cause accidental spills. Preparation for accidental spills, with proper training and reporting systems implemented, can minimize the discharge of pollutants to the environment.

Spills and leaks are one of the largest contributors of stormwater pollutants. Spill prevention and control plans are applicable to any site at which hazardous materials are stored or used. An effective plan should have spill prevention and response procedures that identify hazardous material storage areas, specify material handling procedures, describe spill response procedures, and provide locations of spill clean-up equipment and materials. The plan should take steps to identify and characterize potential spills, eliminate and reduce spill potential, respond to spills when they occur in an effort to prevent pollutants from entering the stormwater drainage system, and train personnel to prevent and control future spills. An adequate supply of spill clean-up materials must be maintained onsite.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

Approach

General Pollution Prevention Protocols

- ☐ Develop procedures to prevent/mitigate spills to storm drain systems.
- ☐ Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.
- ☐ Establish procedures and/or controls to minimize spills and leaks. The procedures should address:
  - ✓ Description of the facility, owner and address, activities, chemicals, and quantities present;

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- ✓ Facility map of the locations of industrial materials;
- ✓ Notification and evacuation procedures;
- ✓ Cleanup instructions;
- ✓ Identification of responsible departments; and
- ✓ Identify key spill response personnel.

- ☐ Recycle, reclaim, or reuse materials whenever possible. This will reduce the amount of process materials that are brought into the facility.

Spill and Leak Prevention and Response

Spill Prevention

- ☐ Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.

- ☐ If illegal dumping is observed at the facility:
  - ✓ Post "No Dumping" signs with a phone number for reporting illegal dumping and disposal. Signs should also indicate fines and penalties applicable for illegal dumping.
  - ✓ Landscaping and beautification efforts may also discourage illegal dumping.
  - ✓ Bright lighting and/or entrance barriers may also be needed to discourage illegal dumping.

- ☐ Store and contain liquid materials in such a manner that if the container is ruptured, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters, or groundwater.

- ☐ If the liquid is oil, gas, or other material that separates from and floats on water, install a spill control device (such as a tee section) in the catch basins that collects runoff from the storage tank area.

Preventative Maintenance

- ☐ Place drip pans or absorbent materials beneath all mounted taps, and at all potential drip and spill locations during filling and unloading of tanks. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.

- ☐ Store and maintain appropriate spill cleanup materials in a location known to all near the tank storage area; and ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.

- ☐ Sweep and clean the storage area monthly if it is paved, *do not hose down the area to a storm drain.*
- ☐ Check tanks (and any containment sumps) daily for leaks and spills. Replace tanks that are leaking, corroded, or otherwise deteriorating with tanks in good condition. Collect all spilled liquids and properly dispose of them.
- ☐ Label all containers according to their contents (e.g., solvent, gasoline).
- ☐ Label hazardous substances regarding the potential hazard (corrosive, radioactive, flammable, explosive, poisonous).
- ☐ Prominently display required labels on transported hazardous and toxic materials (per US DOT regulations).
- ☐ Identify key spill response personnel.

Spill Response

- ☐ Clean up leaks and spills immediately.
- ☐ Place a stockpile of spill cleanup materials where it will be readily accessible (e.g., near storage and maintenance areas).
- ☐ 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.
  - ✓ If possible use physical methods for the cleanup of dry chemicals (e.g., brooms, shovels, sweepers, or vacuums).
- ☐ Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- ☐ Chemical cleanups of material can be achieved with the use of adsorbents, gels, and foams. 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.

Reporting

- Report spills that pose an immediate threat to human health or the environment to the Regional Water Quality Control Board or local authority as location regulations dictate.
- Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).
- Report spills to 911 for dispatch and clean-up assistance when needed. Do not contact fire agencies directly.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - ✓ 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);
  - ✓ Clean-up procedures; and
  - ✓ Responsible parties.

Employee Training Program

- 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; and
  - ✓ Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Employees should be educated about aboveground storage tank requirements. Employees responsible for aboveground storage tanks and liquid transfers should be thoroughly familiar with the Spill Prevention Control and Countermeasure Plan and the plan should be readily available.
- Train employees to recognize and report illegal dumping incidents.

Other Considerations (Limitations and Regulations)

- State regulations exist for facilities with a storage capacity of 10,000 gallons or more of petroleum to prepare a Spill Prevention Control and Countermeasure (SPCC) Plan (Health & Safety Code Chapter 6.67).
- State regulations also exist for storage of hazardous materials (Health & Safety Code Chapter 6.95), including the preparation of area and business plans for emergency response to the releases or threatened releases.
- Consider requiring smaller secondary containment areas (less than 200 sq. ft.) to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

Requirements

Costs (including capital and operation & maintenance)

- Will vary depending on the size of the facility and the necessary controls.
- Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil or water can be quite expensive.

Maintenance (including administrative and staffing)

- Develop spill prevention and control plan, provide and document training, conduct inspections of material storage areas, and supply spill kits.
- Extra time is needed to properly handle and dispose of spills, which results in increased labor costs.

Supplemental Information

Further Detail of the BMP

Reporting

Record keeping and internal reporting represent good operating practices because they can increase the efficiency of the facility and the effectiveness of BMPs. A good record keeping system helps the facility minimize incident recurrence, correctly respond with appropriate cleanup activities, and comply with legal requirements. A record keeping and reporting system should be set up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. Incident records describe the quality and quantity of non-stormwater discharges to the storm sewer. These records should contain the following information:

- Date and time of the incident;
- Weather conditions;
- Duration of the spill/leak/discharge;

- Cause of the spill/leak/discharge;
- Response procedures implemented;
- Persons notified; and
- Environmental problems associated with the spill/leak/discharge.

Separate record keeping systems should be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should be documented. Inspection documentation should contain the following information:

- Date and time the inspection was performed;
- Name of the inspector;
- Items inspected;
- Problems noted;
- Corrective action required; and
- Date corrective action was taken.

Other means to document and record inspection results are field notes, timed and dated photographs, videotapes, and drawings and maps.

Aboveground Tank Leak and Spill Control

Accidental releases of materials from aboveground liquid storage tanks present the potential for contaminating stormwater with many different pollutants. Materials spilled, leaked, or lost from tanks may accumulate in soils or on impervious surfaces and be carried away by stormwater runoff.

The most common causes of unintentional releases are:

- Installation problems;
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves);
- External corrosion and structural failure;
- Spills and overfills due to operator error; and
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa.

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be impervious and paved with Portland cement concrete, free of cracks and gaps, in order to contain leaks and spills.
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10 percent of the volume of all of the containers or 110 percent of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator.

Maintenance is critical to preventing leaks and spills. Conduct routine inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanges, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.
- Visually inspect new tank or container installation for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently relocate accumulated stormwater during the wet season.

- Periodically conduct integrity testing by a qualified professional.

Vehicle Leak and Spill Control

Major spills on roadways and other public areas are generally handled by highly trained Hazmat teams from local fire departments or environmental health departments. The measures listed below pertain to leaks and smaller spills at vehicle maintenance shops.

In addition to implementing the spill prevention, control, and clean up practices above, use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- Perform all vehicle fluid removal or changing inside or under cover to prevent the run-on of stormwater and the runoff of spills.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Immediately drain all fluids from wrecked vehicles.
- Store wrecked vehicles or damaged equipment under cover.
- Place drip pans or absorbent materials under heavy equipment when not in use.
- Use absorbent materials on small spills rather than hosing down the spill.
- Remove the adsorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trashcans or dumpsters can leak oil and contaminate stormwater. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- Design the fueling area to prevent the run-on of stormwater and the runoff of spills:

  Cover fueling area if possible.

  Use a perimeter drain or slope pavement inward with drainage to a sump.

  Pave fueling area with concrete rather than asphalt.

- If dead-end sump is not used to collect spills, install an oil/water separator.
- Install vapor recovery nozzles to help control drips as well as air pollution.
- Discourage "topping-off' of fuel tanks.
- Use secondary containment when transferring fuel from the tank truck to the fuel tank.
- Use absorbent materials on small spills and general cleaning rather than hosing down the area. Remove the absorbent materials promptly.
- Carry out all Federal and State requirements regarding underground storage tanks, or install above ground tanks.
- Do not use mobile fueling of mobile industrial equipment around the facility; rather, transport the equipment to designated fueling areas.
- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Train employees in proper fueling and cleanup procedures.

Industrial Spill Prevention Response

For the purposes of developing a spill prevention and response program to meet the stormwater regulations, facility managers should use information provided in this fact sheet and the spill prevention/response portions of the fact sheets in this handbook, for specific activities.

The program should:

- Integrate with existing emergency response/hazardous materials programs (e.g., Fire Department).
- Develop procedures to prevent/mitigate spills to storm drain systems.
- Identify responsible departments.

- Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.
- Address spills at municipal facilities, as well as public areas.
- Provide training concerning spill prevention, response and cleanup to all appropriate personnel.

References and Resources

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Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp.org.

The Stormwater Managers Resource Center. http://www.stormwatercenter.net/.

Outdoor Loading/Unloading SC-30

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 wind, 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.

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.

General Pollution Prevention Protocols

- ☐ 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.

Good Housekeeping

- ☐ Develop an operations plan that describes procedures for loading and/or unloading.
- ☐ Conduct loading and unloading in dry weather if possible.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- 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 inlets in the area.
- Grade and/or berm the loading/unloading area with drainage to sump; regularly remove materials accumulated in sump.

Spill Response and Prevention Procedures

- Keep your spill prevention and control plan up-to-date or have an emergency spill cleanup plan readily available, as applicable.
- Contain leaks during transfer.
- Store and maintain appropriate spill cleanup materials in a location that is readily accessible and known to all employees.
- Ensure that employees are familiar with the site's spill control plan and proper spill cleanup procedures.
- Use drip pans or comparable devices when transferring oils, solvents, and paints.

Material Handling and Waste Management

- Spot clean leaks and drips routinely to prevent runoff of spillage.
- Do not pour liquid wastes into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections.

- Do not put used or leftover cleaning solutions, solvents, and automotive fluids in the storm drain or sanitary sewer.
- Collect leaking or dripping fluids in drip pans or containers. Fluids are easier to recycle if kept separate.
- Promptly transfer used fluids to the proper waste or recycling drums. Do not leave drip pans or other open containers lying around.
- Minimize the possibility of stormwater pollution from outside waste receptacles by doing at least one of the following:
  - ✓ Use only watertight waste receptacle(s) and keep the lid(s) closed.
  - ✓ Grade and pave the waste receptacle area to prevent run-on of stormwater.
  - ✓ Install a roof over the waste receptacle area.
  - ✓ Install a low containment berm around the waste receptacle area.
  - ✓ Use and maintain drip pans under waste receptacles.
- Post "no littering" signs.
- Perform work area clean-up and dry sweep after daily operations.

Employee Training Program

- 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.

Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document activities performed, quantities of materials removed, and improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.
- Keep accurate logs of daily clean-up operations.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Space and time limitations may preclude all transfers from being performed indoors or under cover.
  - ✓ Designate specific areas for outdoor loading and unloading.
  - ✓ Require employees to understand and follow spill and leak prevention BMPs.
- It may not be possible to conduct transfers only during dry weather.
  - ✓ Limit materials and equipment rainfall exposure to all extents practicable.
  - ✓ Require employees to understand and follow spill and leak prevention BMPs.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

Many facilities will already have indoor or covered areas where loading/unloading takes place and will require no additional capital expenditures.

If outdoor activities are required, construction of berms or other means to retain spills and leaks may require appropriate constructed systems for containment. These containment areas may require significant new capital investment.

Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

Most of the operations and maintenance activities associated with implementing this BMP are integrally linked to routine operations as previously described. Therefore additional O&M is not required.

- Conduct regular inspections and make repairs and improvements as necessary.
- Check loading and unloading equipment regularly for leaks.
- Conduct regular broom dry-sweeping of area. Do not wash with water.

Supplemental Information

Loading and Unloading of Liquids

- 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

Minnesota Pollution Control Agency, *Industrial Stormwater Best Management Practices Guidebook BMP 26 Fueling and Liquid Loading/Unloading Operations*. Available online at: http://www.pca.state.mn.us/index.php/view-document.html?gid=10557.

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Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/.

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Outdoor Equipment Operations SC-32

Description

Outside process equipment operations and maintenance can contaminate stormwater runoff. Activities, such as grinding, painting, coating, sanding, degreasing or parts cleaning, landfills and waste piles, and solid waste treatment and disposal are examples of process operations that can lead to contamination of stormwater runoff. The targeted constituents will vary for each site depending on the operation being performed.

Approach

Implement source control BMPs to limit exposure of outdoor equipment to direct precipitation and stormwater run-on. Refer to SC-22 Vehicle and Equipment Repair for additional information.

General Pollution Prevention Protocols

- ☐ Perform the activity during dry periods whenever possible.
- ☐ Install secondary containment measures where leaks and spills may occur.
- ☐ Use non-toxic chemicals for maintenance and minimize or eliminate the use of solvents.
- ☐ Connect process equipment area to public sanitary sewer or facility wastewater treatment system when possible. Some jurisdictions require that secondary containment areas be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

Good Housekeeping

- ☐ Manage materials and waste properly (see Material Handling and Waste Management) to reduce adverse impacts on stormwater quality.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- Cover the work area with a permanent roof if possible.
- Use drop cloths for sanding and painting operations.
- Use a vacuum for fine particle clean-up in pavement cracks and crevices.
- Minimize contact of stormwater with outside process equipment operations through berming and drainage routing (run-on prevention).
- "Spot clean" leaks and drips routinely. Leaks are not cleaned up until the absorbent is picked up and disposed of properly.
- Paint signs on storm drain inlets to indicate that they are not to receive liquid or solid wastes.
- Use roll down or permanent walls when windy/breezy to prevent wind transport of particulates/pollutants.

Preventative Maintenance

- Design outdoor equipment areas to prevent stormwater runoff and spills. Use a perimeter drain or slope pavement inward with drainage to sump.
- Dry clean the work area regularly. Do not wash outdoor equipment with water if there is a direct connection to the storm drain.
- Pave area with concrete rather than asphalt.
- Inspect outdoor equipment regularly for leaks or spills. Also check for structural failure, spills and overfills due to operator error, and/or failure of piping system.
- Inspect and clean, if necessary, storm drain inlets and catch basins within the outdoor equipment area before October 1 each year.

Spill Response and Prevention Procedures

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have employees trained in emergency spill cleanup procedures present when dangerous waste, liquid chemicals, or other wastes are delivered.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Prevent operator errors by using engineering safe guards and thus reducing accidental releases of pollutant.

Material Handling and Waste Management

- Do not pour liquid wastes into floor drains, sinks, outdoor storm drain inlets, or other storm drain or sewer connections.
- Collect leaking or dripping fluids in drip pans or containers. Fluids are easier to recycle if kept separate.
- Promptly transfer used fluids to the proper waste or recycling drums. Do not leave drip pans or other open containers lying around.
- Minimize the possibility of stormwater pollution from outside waste receptacles by doing at least one of the following:
  - ✓ Use only watertight waste receptacle(s) and keep the lid(s) closed.
  - ✓ Grade and pave the waste receptacle area to prevent run-on of stormwater.
  - ✓ Install a roof over the waste receptacle area.

Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees on proper equipment operation and maintenance procedures.
- Train all employees upon hiring and annually thereafter on proper methods for handling and disposing of waste. Ensure that all employees understand stormwater discharge prohibitions, wastewater discharge requirements, and these best management practices.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.

Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for outdoor equipment, types and quantities of materials removed and disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Providing cover over outdoor equipment may be impractical or cost-prohibitive.
  - ✓ Operate outdoor equipment only during periods of dry weather.
- Regular operations and time limitations may require outdoor activities during wet weather.
  - ✓ Designate specific areas for outdoor activities.
  - ✓ Allow time for work area clean-up after each shift.
  - ✓ Require employees to understand and follow preventive maintenance and spill and leak prevention BMPs.
  - ✓ Design and install secondary containment and good housekeeping BMPs for outdoor equipment area.
- Storage sheds often must meet building and fire code requirements.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Many facilities will already have indoor covered areas where vehicle and equipment repairs take place and will require no additional capital expenditures.
- If outdoor activities are required, construction of berms or other means to retain spills and leaks may require appropriate constructed systems for containment. These containment areas may require significant new capital investment.
- Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

- Most of the operations and maintenance activities associated with implementing this BMP are integrally linked to routine operations as previously described. Therefore additional O&M is not required.
- For facilities responsible for pre-treating their wastewater prior to discharging, the proper functioning of structural treatment system is an important maintenance consideration.
- Routine cleanout of oil and grease is required for the devices to maintain their effectiveness, usually at least once a month. During periods of heavy rainfall, cleanout is required more often to ensure pollutants are not washed through the trap. Sediment removal is also required on a regular basis to keep the device working efficiently.

References and Resources

Minnesota Pollution Control Agency. *Industrial Stormwater Best Management Practices Guidebook BMP 26 Fueling and Liquid Loading/Unloading Operations*. Available online at: http://www.pca.state.mn.us/index.php/view-document.html?gid=10557.

New Jersey Department of Environmental Protection, 2013. *Basic Industrial Stormwater General Permit Guidance Document NJPDES General Permit No NJ0088315*. Available online at: http://www.nj.gov/dep/dwq/pdf/5G2_guidance_color.pdf.

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Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Waste Handling & Disposal SC-34

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

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.

General Pollution Prevention Protocols

- ☐ Accomplish reduction in the amount of waste generated using the following source controls:
  - ✓ Production planning and sequencing;
  - ✓ Process or equipment modification;
  - ✓ Raw material substitution or elimination;
  - ✓ Loss prevention and housekeeping;
  - ✓ Waste segregation and separation; and
  - ✓ Close loop recycling.
- ☐ Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- ☐ Recycle materials whenever possible.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- Use the entire product before disposing of the container.
- To the extent possible, store wastes under cover or indoors after ensuring all safety concerns such as fire hazard and ventilation are addressed.
- Provide containers for each waste stream at each work station. Allow time after shift to clean area.

Good Housekeeping

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain. Clean in a designated wash area that drains to a clarifier.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- If possible, move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

Preventative Maintenance

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.

- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, vacuuming, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Spill Response and Prevention Procedures

- Keep your spill prevention and plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills.
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - ✓ Vehicles equipped with baffles for liquid waste; and
  - ✓ Trucks with sealed gates and spill guards for solid waste.

Material Handling and Waste Management

Litter Control

- Post “No Littering” signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.

- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal. Affix labels to all waste containers.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly handle and dispose of waste using the source control BMPs described above.
- Train employees and subcontractors in proper hazardous waste management.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.

Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for waste handling and disposal, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.

- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital costs will vary substantially depending on the size of the facility and the types of waste handled. Significant capital costs may be associated with reducing wastes by modifying processes or implementing closed-loop recycling.
- Many facilities will already have indoor covered areas where waste materials will be stored and will require no additional capital expenditures for providing cover.
- If outdoor storage of wastes is required, construction of berms or other means to prevent stormwater run-on and runoff may require appropriate constructed systems for containment.
- Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

References and Resources

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Sacramento County Environmental Management Stormwater Program: Best Management Practices. Available online at: http://www.emd.saccounty.net/EnvHealth/Stormwater/Stormwater-BMPs.html.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Safer Alternative Products SC-35

Description

Promote the use of less harmful products and products that contain little or no TMDL and 303(d) list pollutants. Alternatives exist for most product classes including chemical fertilizers, pesticides, cleaning solutions, janitorial chemicals, automotive and paint products, and consumables (batteries, fluorescent lamps).

Approach

Pattern a new program after the many established programs around the state and country. Integrate this best management practice as much as possible with existing programs at your facility.

Develop a comprehensive program based on:

- The "Precautionary Principle," which is an alternative to the "Risk Assessment" model that says it's acceptable to use a potentially harmful product until physical evidence of its harmful effects are established and deemed too costly from an environmental or public health perspective. For instance, a risk assessment approach might say it's acceptable to use a pesticide until there is direct proof of an environmental impact. The Precautionary Principle approach is used to evaluate whether a given product is safe, whether it is really necessary, and whether alternative products would perform just as well.

- Environmentally Preferable Purchasing Program to minimize the purchase of products containing hazardous ingredients used in the facility's custodial services, fleet maintenance, and facility maintenance in favor of using alternate products that pose less risk to employees and to the environment.

- Integrated Pest Management (IPM) or Less-Toxic Pesticide Program, which uses a pest management approach that minimizes the use of toxic chemicals and gets rid of pests

Objectives
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	
Preventative Maintenance	
Spill and Leak Prevention and Response	
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	

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by methods that pose a lower risk to employees, the public, and the environment.

- Energy Efficiency Program including no-cost and low-cost energy conservation and efficiency actions that can reduce both energy consumption and electricity bills, along with long-term energy efficiency investments.

Consider the following mechanisms for developing and implementing a comprehensive program:

- Policies
- Procedures
  - ✓ Standard operating procedures (SOPs);
  - ✓ Purchasing guidelines and procedures; and
  - ✓ Bid packages (services and supplies).
- Materials
  - ✓ Preferred or approved product and supplier lists;
  - ✓ Product and supplier evaluation criteria;
  - ✓ Training sessions and manuals; and
  - ✓ Fact sheets for employees.

Implement this BMP in conjunction with the Vehicle and Equipment Management fact sheets (SC-20 – SC-22) and SC-41 Building and Grounds Maintenance.

Employee Training Program

- Employees who handle potentially harmful materials should be trained in the use of safer alternatives.
- Purchasing departments should be trained on safer alternative products and encouraged to procure less hazardous materials and products that contain little or no harmful substances or TMDL pollutants.
- Employees and contractors / service providers can both be educated about safer alternatives by using information developed by a number of organizations including the references and resources provided in this fact sheet.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended “work-arounds”

- Alternative products may not be available, suitable, or effective in every case.

- ✓ Minimize use of hazardous/harmful products if no alternative product is available.

Regulatory Considerations

This BMP has no regulatory requirements unless local/municipal ordinance applies. Existing regulations already encourage facilities to reduce the use of hazardous materials through incentives such as reduced:

- Specialized equipment storage and handling requirements;
- Storm water runoff sampling requirements;
- Training and licensing requirements; and
- Record keeping and reporting requirements.

Cost Considerations

- The primary cost is for staff time to: 1) develop new policies and procedures and 2) educate purchasing departments and employees who handle potentially harmful materials about the availability, procurement, and use of safer alternatives.
- Some alternative products may be slightly more expensive than conventional products.

Supplemental Information

The following discussion provides some general information on safer alternatives. More specific information on particular hazardous materials and the available alternatives may be found in the references and resources listed below.

- Automotive products – Less toxic alternatives are not available for many automotive products, especially engine fluids. But there are alternatives to grease lubricants, car polishes, degreasers, and windshield washer solution. Refined motor oil is also available.
- Vehicle/Trailer lubrication – Fifth wheel bearings on trucks require routine lubrication. Adhesive lubricants are available to replace typical chassis grease.
- Cleaners – Vegetables-based or citrus-based soaps are available to replace petroleum-based soaps/detergents.
- Paint products – Water-based paints, wood preservatives, stains, and finishes with low VOC content are available.
- Pesticides – Specific alternative products or methods exist to control most insects, fungi, and weeds.
- Chemical Fertilizers – Compost and soil amendments are natural alternatives.
- Consumables – Manufacturers have either reduced or are in the process of reducing the amount of heavy metals in consumables such as batteries and fluorescent lamps.

All fluorescent lamps contain mercury, however low-mercury containing lamps are now available from most hardware and lighting stores. Fluorescent lamps are also more energy efficient than the average incandescent lamp.

- Janitorial chemicals – Even biodegradable soap can harm fish and wildlife before it biodegrades. Biodegradable does not mean non-toxic. Safer products and procedures are available for floor stripping and cleaning, as well as carpet, glass, metal, and restroom cleaning and disinfecting. Use paper products with post-consumer recycled content and implement electric had dryers.

Examples

There are a number of business and trade associations, and communities with effective programs. Some of the more prominent are listed below in the references and resources section.

References and Resources

Note: Many of these references provide alternative products for materials that typically are used inside and disposed to the sanitary sewer as well as alternatives to products that usually end up in the storm drain.

General Sustainable Practices and Pollution Prevention Including Pollutant-Specific Information

California Department of Toxic Substances Control, http://www.dtsc.ca.gov/PollutionPrevention/GreenTechnology/Index.cfm.

CalRecycle, http://www.calrecycle.ca.gov/Business/Regulated.htm.

City of Santa Monica Office of Sustainability and Environment, http://www.smgov.net/departments/ose/.

City of Palo Alto, http:// www.city.palo-alto.ca.us/cleanbay.

City and County of San Francisco, Department of the Environment, http://www.sfenvironment.org/toxics-health/greener-business-practices.

Green Business Program, http://www.greenbiz.ca.gov/GRlocal.html .

Product Stewardship Institute, http://www.productstewardship.us/index.cfm.

Sacramento Clean Water Business Partners. http://www.sacstormwater.org/CleanWaterBusinessPartners/CleanWaterBusinessPartners.html.

USEPA. National Pollutant Discharge Elimination System (NPDES) Stormwater Discharges From Industrial Facilities, http://cfpub.epa.gov/npdes/stormwater/indust.cfm.

USEPA Region IX Pollution Prevention Program, http://www.epa.gov/region9/waste/p2/business.html.

Western Sustainability and Pollution Prevention Network, http://wsppn.org/.

Metals (mercury, copper)

National Electrical Manufacturers Association – Environmental Stewardship, http://www.nema.org/Policy/Environmental-Stewardship/pages/default.aspx.

Sustainable Conservation, http://www.suscon.org.

Auto Recycling Project

Brake Pad Partnership

Pesticides and Chemical Fertilizers

Bio-Integral Resource Center, http://www.birc.org.

California Department of Pesticide Regulation, http://www.cdpr.ca.gov/dprprograms.htm.

University of California Statewide IPM Program, http://www.ipm.ucdavis.edu/default.html.

Dioxins

Bay Area Dioxins Project, http://www.abag.ca.gov/bayarea/dioxin/project_materials.htm.

Building & Grounds Maintenance SC-41

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.

General Pollution Prevention Protocols

- ☐ Switch to non-toxic chemicals for maintenance to the maximum extent possible.
- ☐ Choose cleaning agents that can be recycled.
- ☐ Encourage proper lawn management and landscaping, including use of native vegetation.
- ☐ 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.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- Clean work areas at the end of each work shift using dry cleaning methods such as sweeping and vacuuming.

Good Housekeeping

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. See also SC-40, Contaminated and Erodible Areas, for more information.

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

- 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.

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.

Building & Grounds Maintenance SC-41

Spill Response and Prevention Procedures

- 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.

Material Handling and Waste 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.
- 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.

Employee Training Program

- 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 needs of individual staff.

Quality Assurance and Record Keeping

- Keep accurate logs that document maintenance activities performed and minimum BMP measures implemented.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Additional capital costs are not anticipated for building and grounds maintenance. Implementation of the minimum BMPs described above should be conducted as part of regular site operations.

Maintenance

- Maintenance activities for the BMPs described above will be minimal, and no additional cost is anticipated.

Supplemental Information

Fire Sprinkler Line Flushing

Site 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

City of Seattle, Seattle Public Utilities Department of Planning and Development, 2009. *Stormwater Manual Vol. 1 Source Control Technical Requirements Manual.*

Kennedy/Jenks Consultants, 2007. *The Truckee Meadows Industrial and Commercial Storm Water Best Management Practices Handbook*. Available online at: http://www.cityofsparks.us/sites/default/files/assets/documents/env-control/construction/TM-I-C_BMP_Handbook_2-07-final.pdf.

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Building Repair and Construction SC-42

Description

Site modifications are common, particularly at large industrial sites. The activity may vary from minor and normal building repair to major remodeling, or the construction of new facilities. These activities can generate pollutants including solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos installation. Protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants to stormwater from building repair, remodeling, and minor construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.

This fact sheet is intended to be used for minor repairs and construction. If major construction is required, the guidelines in the Construction BMP Handbook should be followed.

Approach

The BMP approach is to reduce potential for pollutant discharges 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.

General Pollution Prevention Protocols

- ☐ Recycle residual paints, solvents, lumber, and other materials to the maximum extent practicable.
- ☐ Avoid outdoor repairs and construction during periods of wet weather.
- ☐ Use safer alternative products to the maximum extent practicable. See also SC-35 Safer Alternative Products for more information.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	✓
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- Buy recycled products to the maximum extent practicable.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contract to ensure certain proper housekeeping and disposal practices are implemented.
- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.

Good Housekeeping

Repair & Remodeling

- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep and vacuum the area regularly to remove sediments and small debris.
- Cover raw materials of particular concern that must be left outside, particularly during the rainy season. See also SC-33 Outdoor Storage of Raw Materials for more information.
- Use equipment and tools such as bag sanders to reduce accumulation of debris.
- Limit/prohibit work on windy days; implement roll-down walls or other measures to reduce wind transport of pollutants.
- Do not dump waste liquids down the storm drain.
- Dispose of wash water, sweepings, and sediments properly.
- Store liquid materials properly that are normally used in repair and remodeling such as paints and solvents. See also SC-31 Outdoor Liquid Container Storage for more information.
- Sweep out rain gutters or wash the gutter and trap the particles at the outlet of the downspout. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck, and clean the catch basin sump where you placed the plug.
- Clean the storm drain system in the immediate vicinity of the construction activity after it is completed. See also SC-44 Drainage System Maintenance for more information.

Painting

- Enclose painting operations consistent with local air quality regulations and OSHA.
- Local air pollution regulations may, in many areas of the state, specify painting procedures which if properly carried out are usually sufficient to protect water quality.
- Develop paint handling procedures for proper use, storage, and disposal of paints.

- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint containers.
- Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100 percent effective.
- Transfer and load paint and hot thermoplastic away from storm drain inlets.
- Do not transfer or load paint near storm drain inlets.
- Plug nearby storm drain inlets prior to starting painting and remove plugs when job is complete when there is risk of a spill reaching storm drains.
- Cover nearby storm drain inlets prior to starting work if sand blasting is used to remove paint.
- Use a ground cloth to collect the chips if painting requires scraping or sand blasting of the existing surface. Dispose of the residue properly.
- Cover or enclose painting operations properly to avoid drift.
- Clean the application equipment in a sink that is connected to the sanitary sewer if using water based paints.
- Capture all cleanup-water and dispose of properly.
- Dispose of paints containing lead or tributyl tin and considered a hazardous waste properly.
- Store leftover paints if they are to be kept for the next job properly, or dispose properly.
- Recycle paint when possible. Dispose of paint at an appropriate household hazardous waste facility.

Spill Response and Prevention Procedures

- Keep your spill prevention and control plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Clean up spills immediately.
- Excavate and remove the contaminated (stained) soil if a spill occurs on dirt.

Material Handling and Waste Management

- Post “No Littering” signs and enforce anti-litter laws.

- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Keep waste collection areas clean.
- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal. Affix labels to all waste containers.
- Make sure that hazardous waste is collected, removed, and disposed of properly. See also SC-34, Waste Handling and Disposal for more information.

Sediment and Erosion Controls

- Limit disturbance to bare soils and preserve natural vegetation whenever possible. See also EC-2, Preservation of Existing Vegetation, in the Construction BMP Handbook.
- Stabilize loose soils by re-vegetating whenever possible. See also EC-4 Hydroseeding, in the Construction BMP Handbook.
- Utilize non-vegetative stabilization methods for areas prone to erosion where vegetative options are not feasible. Examples include:
  - ✓ Areas of vehicular or pedestrian traffic such as roads or paths;
  - ✓ Arid environments where vegetation would not provide timely ground coverage, or would require excessive irrigation;
  - ✓ Rocky substrate, infertile or droughty soils where vegetation would be difficult to establish; and
  - ✓ Areas where vegetation will not grow adequately within the construction time frame.

  There are several non-vegetative stabilization methods and selection should be based on site-specific conditions. See also EC-16 Non-Vegetative Stabilization, in the Construction BMP Handbook.

- Utilize chemical stabilization when needed. See also EC-5 Soil Binders, in the Construction BMP Handbook.
- Use geosynthetic membranes to control erosion if feasible. See also EC-7 Geotextiles and Mats, in the Construction BMP Handbook.
- Stabilize all roadways, entrances, and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site. See also TC 1-3 Tracking Control, in the Construction BMP Handbook.
- Refer to the supplemental information provided below for projects that involve more extensive soil disturbance activities.

Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly implement the source control BMPs described above. Detailed information for Sediment and Erosion Control BMPs is provided in the Construction BMP Handbook.
- Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employees can be lost by unknowing off-site contractors, so make sure they are well informed about pollutant source control responsibilities.
- Use a training log or similar method to document training.

Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for building repair and construction, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- This BMP is for minor construction only. The State's General Construction Activity Stormwater Permit has more extensive requirements for larger projects that would disturb one or more acres of surface.
  - ✓ Refer to the companion "Construction Best Management Practice Handbook" which contains specific guidance and best management practices for larger-scale projects.

- Time constraints may require some outdoor repairs and construction during wet weather.
  - ✓ Require employees to understand and follow good housekeeping and spill and leak prevention BMPs.
  - ✓ Inspect sediment and erosion control BMPs daily during periods of wet weather and repair or improve BMP implementation as necessary.
- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
  - ✓ Minimize use of hazardous materials to the maximum extent practicable.
- Be certain that actions to help stormwater quality are consistent with Cal- and Fed-OSHA and air quality regulations.
- Prices for recycled/safer alternative materials and fluids may be higher than those of conventional materials.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Limited capital investments may be required at some sites if adequate cover and containment facilities do not exist for construction materials and wastes.
- Purchase and installation of erosion and sediment controls, if needed will require additional capital investments, and this amount will vary depending on site characteristics and the types of BMPs being implemented.
- Minimize costs by maintaining existing vegetation and limiting construction operations on bare soils.

Maintenance

- The erosion and sediment control BMPs described above require periodic inspection and maintenance to remain effective. The cost of these actions will vary depending on site characteristics and the types of BMPs being implemented.
- Irrigation costs may be required to establish and maintain vegetation.

Supplemental Information

Soil/Erosion Control

If the work involves exposing large areas of soil, employ the appropriate soil erosion and control techniques. See the Construction Best Management Practice Handbook. If old buildings are being torn down and not replaced in the near future, stabilize the site using measures described in SC-40 Contaminated or Erodible Areas.

If a building is to be placed over an open area with a storm drainage system, make sure the storm inlets within the building are covered or removed, or the storm line is connected to the sanitary sewer. If because of the remodeling a new drainage system is to be installed or the existing system is to be modified, consider installing catch basins as they serve as effective "in-line" treatment devices. Include in the catch basin a "turn-down" elbow or similar device to trap floatables.

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Parking Area Maintenance SC-43

Description

Parking lots 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 areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

BMPs for other outdoor areas on site (loading/unloading, material storage, and equipment operations) are described in SC-30 through SC-33.

Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking 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.

General Pollution Prevention Protocols

- ☐ Encourage advanced designs and maintenance strategies for impervious parking lots. Refer to the treatment control BMP fact sheets in this manual for additional information.
- ☐ Keep accurate maintenance logs to evaluate BMP implementation.

Good Housekeeping

- ☐ Keep all parking areas clean and orderly. Remove debris, litter, and sediments in a timely fashion.
- ☐ Post "No Littering" signs and enforce anti-litter laws.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- ☐ Provide an adequate number of litter receptacles.
- ☐ Clean out and cover litter receptacles frequently to prevent spillage.

Preventative Maintenance

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.

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.
- ☐ Dispose of parking lot sweeping debris and dirt at a landfill.
- ☐ 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.
- ☐ 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.
  - ✓ Dispose of spilled materials and absorbents appropriately.

Surface Repair

- ☐ Check local ordinance for SUSMP/LID ordinance.
- ☐ 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 during sweeping 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.

Spill Response and Prevention Procedures

- 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.

Employee Training Program

- 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.
- Use a training log or similar method to document training.

Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for parking area maintenance, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital investments may be required at some sites to purchase sweeping equipment, train sweeper operators, install oil/water/sand separators, or implement advanced BMPs. These costs can vary significantly depending upon site conditions and the amount of BMPs required.

Maintenance

- Sweep and clean parking lots regularly to minimize pollutant transport into storm drains from stormwater runoff.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Maintain advanced BMPs such as vegetated swales, infiltration trenches, or detention basins as appropriate. Refer to the treatment control fact sheets for more information.

Supplemental Information

Advanced BMPs

Some parking areas may require advanced BMPs to further reduce pollutants in stormwater runoff, and a few examples are listed below. Refer to the Treatment Control Fact Sheets and the New Development and Redevelopment Manual for more information.

- When possible, direct 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.

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Drainage System Maintenance SC-44

Description

As a consequence of its function, the stormwater drainage facilities on site convey stormwater that may contain certain pollutants either to the offsite conveyance system that collects and transports urban runoff and stormwater, or directly to receiving waters. The protocols in this fact sheet are intended to reduce pollutants leaving the site to the offsite drainage infrastructure or to receiving waters through proper on-site conveyance system operation and maintenance. The targeted constituents will vary depending on site characteristics and operations.

Approach

Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ 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.
- ☐ Develop and follow a site specific drainage system maintenance plan that describes maintenance locations, methods, required equipment, water sources, sediment collection areas, disposal requirements, and any other pertinent information.

Good Housekeeping

Illicit Connections and Discharges

- ☐ Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- ✓ Identify evidence of spills such as paints, discoloring, odors, etc.
- ✓ Record locations of apparent illegal discharges/illicit connections.
- ✓ Track flows back to potential discharges 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" or similar 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 for additional information.

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); and
  - ✓ 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 for additional information.

Preventative Maintenance

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.

- 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. Prioritize storm drain inlets; 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 state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Wildlife. 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 Army Corps of Engineers and USFWS.

Spill Response and Prevention Procedures

- Keep your spill prevention control plan up-to-date.

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- 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.

Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly handle and dispose of waste using the source control BMPs described above.
- Train employees and subcontractors in proper hazardous waste management.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.
- 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).

Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for drainage system maintenance, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.
- Keep accurate logs of illicit connections, illicit discharges, and illegal dumping into the storm drain system including how wastes were cleaned up and disposed.
- Establish procedures to complete logs and file them in the central office.

Potential Limitations and Work-Arounds

Provided below are typical limitations and recommended "work-arounds" for drainage system maintenance:

- 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.
  - ✓ Perform all maintenance onsite and do not flush accumulated material downstream to private property or riparian habitats.
- 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, and liquid/sediment disposal.
  - ✓ Develop and follow a site specific drainage system maintenance plan that describes maintenance locations, methods, required equipment, water sources, sediment collection areas, disposal requirements, and any other pertinent information.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
  - ✓ Do not dump illegal materials anywhere onsite.
  - ✓ Identify illicit connections, illicit discharge, and illegal dumping.
  - ✓ Cleanup spills immediately and properly dispose of wastes.
- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the sanitary sewer system.
  - ✓ Collect all materials and pollutants accumulated in drainage system and dispose of according to local regulations.
  - ✓ Install debris excluders in areas with a trash TMDL.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital costs will vary substantially depending on the size of the facility and characteristics of the drainage system. Significant capital costs may be associated with purchasing water trucks, vacuum trucks, and any other necessary cleaning equipment or improving the drainage infrastructure to reduce the potential .
- Developing and implementing a site specific drainage system maintenance plan will require additional capital if a similar program is not already in place.

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.
- 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.

Supplemental Information

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 re-suspension 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 if allowed or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

City of Seattle, Seattle Public Utilities Department of Planning and Development, 2009. *Stormwater Manual Vol. 1 Source Control Technical Requirements Manual*.

Knox County Tennessee *Stormwater Management Manual* Chapter 5 Drainage System Maintenance, 2008. Available online at: http://www.knoxcounty.org/stormwater/manual/Volume%201/knoxco_swmm_v1_chap5_jan2008.pdf.

US EPA. Storm Drain System Cleaning, 2012. Available online at: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=102.

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.

Maintenance Bays & Docks SD-31

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Several measures can be taken to prevent operations at maintenance bays and loading docks from contributing a variety of toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to the stormwater conveyance system.

Approach

In designs for maintenance bays and loading docks, containment is encouraged. Preventative measures include overflow containment structures and dead-end sumps. However, in the case of loading docks from grocery stores and warehouse/distribution centers, engineered infiltration systems may be considered.

Suitable Applications

Appropriate applications include commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for vehicle maintenance and repair 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 requirements.

Designing New Installations

Designs of maintenance bays should consider the following:

- Repair/maintenance bays and vehicle parts with fluids should be indoors; or designed to preclude urban run-on and runoff.
- Repair/maintenance floor areas should be paved with Portland cement concrete (or equivalent smooth impervious surface).

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- Repair/maintenance bays should be designed to capture all wash water leaks and spills. Provide impermeable berms, drop inlets, trench catch basins, or overflow containment structures around repair bays to prevent spilled materials and wash-down waters form entering the storm drain system. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

- Other features may be comparable and equally effective.

The following designs of loading/unloading dock areas should be considered:

- Loading dock areas should be covered, or drainage should be designed to preclude urban run-on and runoff.

- Direct connections into storm drains from depressed loading docks (truck wells) are prohibited.

- Below-grade loading docks from grocery stores and warehouse/distribution centers of fresh food items should drain through water quality inlets, or to an engineered infiltration system, or an equally effective alternative. Pre-treatment may also be required.

- Other features may be 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.

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 permit.

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

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

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.

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.

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