City of Petaluma
Planning Division

270 and 280 Casa Grande Road
Creekwood Housing Development Project

Initial Study

October 2022

RANEY PLANNING & MANAGEMENT, INC. 20 years
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INITIAL STUDY
OCTOBER 2022

A. BACKGROUND

1. Project Title: 270 and 280 Casa Grande Road Creekwood Housing Development Project

2. Lead Agency Name and Address: City of Petaluma, Planning Division, 11 English Street, Petaluma, CA 94952

3. Contact Person and Phone Number: Greg Powell, Principal Planner, (707) 778-4340

4. Project Location: 270 and 280 Casa Grande Road, APNs: 017-040-051 and -016

5. Project Sponsor's Name and Address: Falcon Point Associates, LLC, 3496 Buskirk Avenue, Suite 104, Pleasant Hill, CA 94523, (925) 939-3473

6. Existing General Plan Designation: Medium Density Residential

7. Existing Zoning Designation: Residential 4 (R4)

8. Required Approvals from Other Public Agencies: Conditional Letter of Map Revision; Section 404 Nationwide Permit (or Letter of Permission); Section 401 Water Quality Certification; Section 1600 Lake and Streambed Alteration Agreement; National Pollutant Discharge Elimination System (NPDES) Construction General Permit; NPDES Phase II MS4 General Permit

9. Surrounding Land Uses and Setting:

The project site consists of two parcels totaling 5.2 acres that abut the eastern boundary of Casa Grande Road in the City of Petaluma. The 280 Casa Grande Road parcel contains an existing residence and undeveloped land covered in grasses. The 270 Casa Grande Road parcel contains an existing residence, several associated outbuildings, a landscaped backyard, and a small orchard in the northeast corner of the project site, within a depressed area, near Adobe Creek (Creek). The Creek and its associated vegetation forms the eastern boundary of the project site. The remaining portions of the 270 Casa Grande Road parcel are generally characterized by grasses that are routinely mowed or grazed to reduce fire hazards.

The project site is bound to the west by Casa Grande Road and to the east by the Creek and its associated riparian corridor. The project site's northern boundary abuts the Casa Grande Senior Apartments. A single-family residence is located further to the north. A single-family residential neighborhood is located to the east, across the Creek, with access from Spyglass Road. Further east from the single-family residences is a multifamily neighborhood, to which Lakeville Circle provides access. The project site's southern boundary abuts the Casa Grande Subdivision, which is currently under construction and will consist of 36 single-family residential units. An existing single-family residential neighborhood is located further to the south and abuts the southern property line of the Casa Grande Subdivision site. Casa Grande High School and Crinella Park are located to the west, across Casa Grande Road, from the project site. It should be noted that Sonoma Mountain High School, an alternative high school in the City, is also located on the Casa Grande High School campus.

10. Project Description Summary:

The proposed 270 and 280 Casa Grande Road Creekwood Housing Development Project (project) would include demolition of the on-site residence at 280 Casa Grande Road, retention of the existing residence at 270 Casa Grande Road, and development of 62 dwelling units. The proposed dwelling units would be constructed across three blocks (Blocks 1, 2, and 3). Block 1 units would be arranged in tri-plex configurations. Units within Blocks 2 and 3 would primarily be arranged in duet unit configurations. Each dwelling unit would include Usable Open Space (UOS) in the form of semi-private or private yard areas. In addition, the project would include construction of various on-site road and utility improvements, landscaping, and a new off-site public multi-use pathway, with a bridge connection over the Creek.

The project would require City approval of a Vesting Tentative Parcel Map, Site Plan and Architectural Review, and a Tree Removal Permit. In addition, the project would require Federal Emergency Management Agency (FEMA) approval of a Conditional Letter of Map Revision (CLOMR), as well as other approvals from responsible and trustee agencies, including, but not necessarily limited to, California Department of Fish and Wildlife (CDFW) approval of a 1600 Lake and Streambed Alteration Agreement and Regional Water Quality Control Board (RWQCB) approval of a NPDES Construction General Permit and NPDES Phase II MS4 General Permit.

11. Status of Native American Consultation Pursuant to Public Resources Code (PRC) Section 21080.3.1.

In compliance with Assembly Bill (AB) 52 (PRC Section 21080.3.1), a project notification letter was distributed to the Federated Indians of Graton Rancheria on May 26, 2022. The Federated Indians of Graton Rancheria submitted a response on June 16, 2022 requesting formal consultation with the lead agency, and in response, the City, as the lead agency, initiated consultation and met with the tribe on August 31, 2022.

B. SOURCES

The following documents are referenced information sources used for the purposes of this Initial Study:

1. Associated Lighting Representatives, Inc. *Lighting Analysis*. March 1, 2022.
2. Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines*. May 2017.
3. California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.
4. California Department of Conservation. *California Important Farmland Finder*. Available at: https://maps.conservation.ca.gov/dlrp/ciff/. Accessed June 2022.
5. California Department of Conservation. *Earthquake Zones of Required Investigation*. Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed August 2022.
6. California Department of Forestry and Fire Protection. *FHSZ Viewer*. Available at: https://egis.fire.ca.gov/FHSZ/. Accessed August 2022.
7. California Department of Resources Recycling and Recovery. *SWIS Facility/Site Activity Details: Central Disposal Site (49-AA-0001)*. Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1224?siteID=3621. Accessed September 2022.
8. California Department of Toxic Substances Control. *Hazardous Waste and Substances Site List*. Available at: https://dtsc.ca.gov/dtscs-cortese-list. Accessed August 2022.
9. California Department of Transportation. *2017 Traffic Volumes: Route 103-116*. Available at: https://dot.ca.gov/programs/traffic-operations/census/traffic-volumes/2017/route-103-116. Accessed August 2022.
10. California Department of Transportation. *California Scenic Highway Mapping System*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed June 2022.
11. California Energy Commission. *Lighting*. Available at: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/online-resource-center/lighting. Accessed June 2022.
12. California Energy Commission. *Title 24 2019 Building Energy Efficiency Standards FAQ*. November 2018.
13. City of Petaluma. *2020 Urban Water Management Plan*. June 2021.
14. City of Petaluma. *Airport Safety Zones, Petaluma Municipal Airport*. Available at: https://cityofpetaluma.org/documents/airport-safety-zones-map/. Accessed August 2022.
15. City of Petaluma. *City of Petaluma 2015-2023 Housing Element*. Revised November 19, 2018.
16. City of Petaluma. *City of Petaluma General Plan 2025*. Adopted May 19, 2008.
17. City of Petaluma. *City of Petaluma General Plan 2025 Environmental Impact Report*. February 2008.
18. City of Petaluma. *Emergency Evacuations*. Available at: https://cityofpetaluma.org/emergency-evacuations/. Accessed August 2022.
19. City of Petaluma. *Fire*. Available at: https://cityofpetaluma.org/departments/fire/. Accessed June 2022.
20. City of Petaluma. *Police Divisions*. Available at: https://cityofpetaluma.org/police-divisions/. Accessed September 2022.
21. City of Petaluma. *Recycled Water Master Plan*. June 2004.
22. Illingworth & Rodkin, Inc. *Creekwood Residential Development Noise and Vibration Assessment, 270-280 Casa Grande Road, Petaluma, California*. August 15, 2022.

23. Illingworth & Rodkin, Inc. *Creekwood Subdivision Construction Health Risk and Greenhouse Gas Assessment, Petaluma, California*. July 11, 2022.
24. Montrose Environmental Solutions. *Cultural Resources Study: Falcon Point Associates, LLC, Creekwood Housing Development Project*. April 2022.
25. Montrose Environmental Solutions. *Phase I Environmental Site Assessment: Falcon Point Associates, LLC, Creekwood Housing Development Project*. June 2022.
26. PJC & Associates, Inc. *Addendum to Geotechnical Report: Proposed Residential Subdivision, 270 & 280 Casa Grande Road, Petaluma, California, APN: 017-040-008 & 015*. January 6, 2022.
27. PJC & Associates, Inc. *Geotechnical Investigation: Proposed Residential Development, 270 & 280 Casa Grande Road, Petaluma, California, APN: 017-040-008 & 015*. September 21, 2020.
28. Sonoma County Transportation Authority. *Moving Forward 2050: Sonoma County Comprehensive Transportation Plan.* September 2021.
29. U.S. Environmental Protection Agency. *Learn About Asbestos*. Available at: https://www.epa.gov/asbestos/learn-about-asbestos#find. Accessed August 2022.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or as indicated by the checklist on the following pages.

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

D. DETERMINATION

On the basis of this Initial Study:

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

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

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

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

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

Signature	Date
Greg Powell, Principal Planner	City of Petaluma
Printed Name	For

E. BACKGROUND AND INTRODUCTION

This Initial Study (IS) identifies and analyzes the potential environmental impacts of the project. The information and analysis presented in this document is organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines.

The City of Petaluma adopted the City of Petaluma General Plan 2025 and certified an associated Environmental Impact Report (EIR) on May 19, 2008.[1,2] The General Plan EIR was prepared as a program-level EIR, pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations [CCR], Sections 15000 et seq.).

Pursuant to Section 15152 of the CEQA Guidelines, a project that is consistent with the General Plan and zoning designations of the City may tier from the analysis contained in the General Plan EIR, incorporating by reference the general discussions from the broader EIR. The project would be consistent with the current Medium Density Residential General Plan land use designation for the project site and the R4 zoning district. Therefore, in accordance with Section 15152 of the CEQA Guidelines, the analysis within this IS may tier off the analysis previously prepared in the General Plan EIR, which can be accessed through the City of Petaluma website at https://cityofpetaluma.org/general-plan/. The analysis herein is also based upon project-specific technical studies and information. Analysis from both the General Plan EIR and the project-specific technical studies are incorporated by reference in this IS.

F. PROJECT DESCRIPTION

The following section provides a comprehensive description of the project in accordance with CEQA Guidelines.

Project Location, Setting, and Surrounding Land Uses

The project site consists of two parcels totaling 5.2 acres that abut the eastern boundary of Casa Grande Road in the City of Petaluma (see Figure 1 and Figure 2). The parcels are identified by the following addresses and Assessor's Parcel Numbers (APN): 270 Casa Grande Road (APN 017-040-051) and 280 Casa Grande Road (APN 017-040-016). The 280 Casa Grande Road (APN 017-040-016) parcel contains an existing residence and undeveloped land covered in grasses. The 270 Casa Grande Road (APN 017-040-051) parcel contains an existing residence, several associated outbuildings, a landscaped backyard, and a small orchard in the northeast corner of the project site, within a depressed area, near the Creek. The Creek and its associated vegetation forms the eastern boundary of the project site. The Creek is an ephemeral creek that flows in a north-south direction and is tributary to the Petaluma River to the south, which then flows into the San Pablo Bay. The remaining portions of the 270 Casa Grande Road parcel are generally characterized by grasses that are routinely mowed or grazed to reduce fire hazards. Grazing of the project site (i.e., both parcels) is conducted by several sheep owned and cared for by the current property owner of 270 Casa Grande Road.

Currently, FEMA designates the majority of the project site as being within Zone AE, defined by FEMA as an area within the 100-year floodplain. Base flood elevations range from 43 to 47 feet above mean sea level. As discussed further below, the project applicant is in the process of requesting a CLOMR from FEMA to revise the limits of the 100-year floodplain based on site-specific floodplain modeling.

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1 City of Petaluma. *City of Petaluma General Plan 2025*. Adopted May 19, 2008.
2 City of Petaluma. *City of Petaluma General Plan 2025 Environmental Impact Report*. February 2008.

Figure 1
Regional Vicinity Map

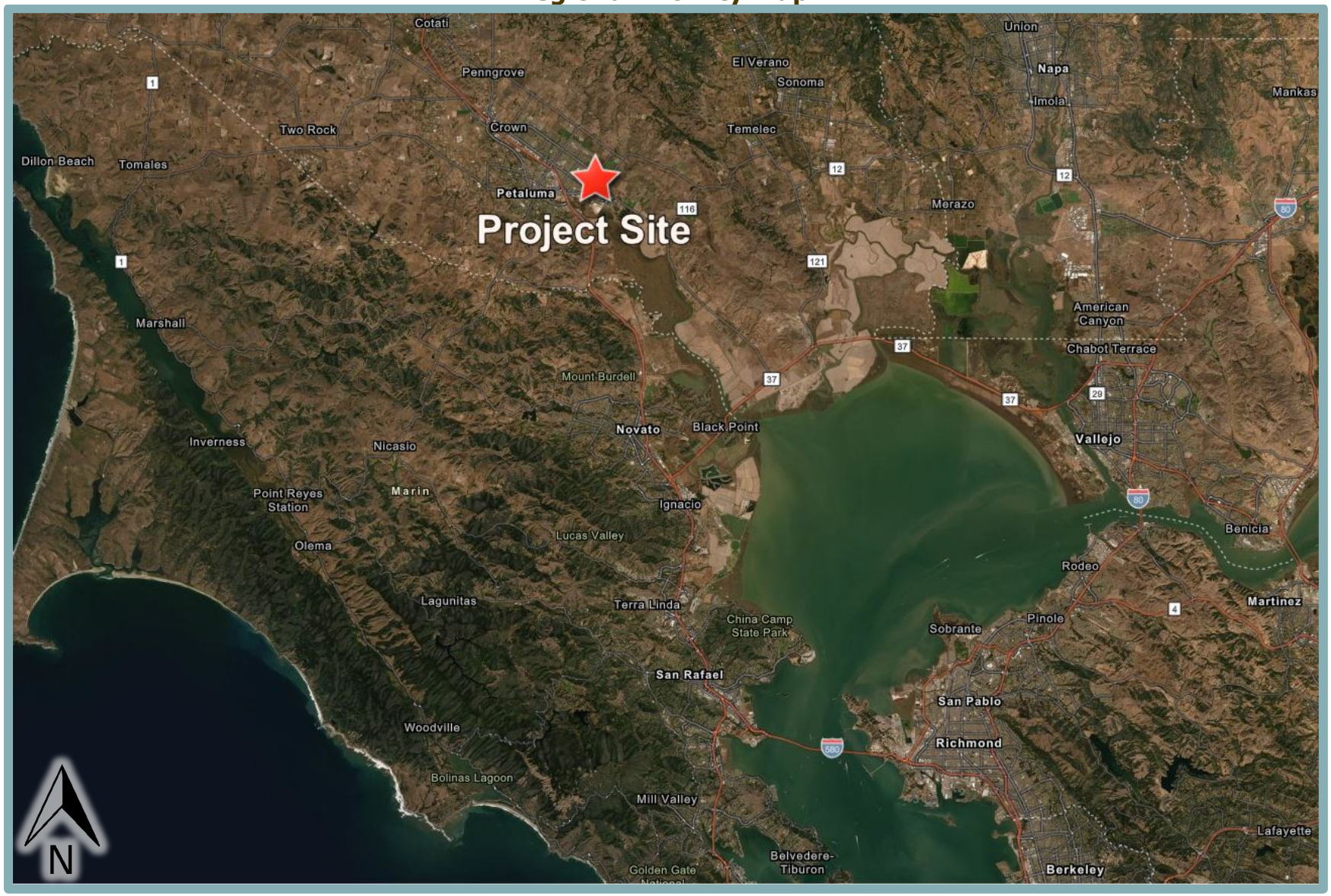


Figure 2
Project Site Boundaries

In support of the CLOMR, West Consultants, Inc., the hydrology consultant for the project, is conducting new mapping of project site elevations and hydraulic modeling, which preliminarily demonstrates that the site is elevated above the 100-year floodplain and would not be vulnerable to potential flood hazards associated with Zone AE.

The project site is bound to the west by Casa Grande Road and to the east by the Creek and its associated riparian corridor. The project site's northern boundary abuts the Casa Grande Senior Apartments. A single-family residence located at 500 Casa Grande Road is located further to the north and abuts the Casa Grande Senior Apartments' northern property line. A single-family residential neighborhood is located to the east, across from the Creek, with access from Spyglass Road. A walking path is located on the west side of Spyglass Road, allowing north-south access along the Creek. Further east from the single-family residences is a multifamily neighborhood, to which Lakeville Circle provides access. The project site's southern boundary abuts the Casa Grande Subdivision, which is currently under construction and will consist of 36 single-family residential units. An existing single-family residential neighborhood is located further to the south and abuts the southern property line of the Casa Grande Subdivision site. Casa Grande High School and Crinella Park are located to the west, across Casa Grande Road, from the project site.

Existing Land Use and Zoning Designations

The City of Petaluma General Plan designates the project site as Medium Density Residential, and the site is zoned R4. Pursuant to the City's General Plan, the Medium Density Residential designation provides for a variety of dwelling types, including single-family and multifamily housing, and allows for a density ranging from 8.1 to 18.0 dwelling units per acre (du/ac). Single-family and multifamily residences are both permitted uses within the R4 zone. Table 1 describes the land use and zoning designations of the parcels surrounding the project site.

Table 1
Surrounding Land Use and Zoning Designations

Parcel Location	Land Use	Zoning
North of the Project Site	High Density Residential	Planned Unit District
East of the Project Site	Open Space	Open Space Park
South of the Project Site	Medium Density Residential	Residential 4
West of the Project Site	Education	Planned Unit District

Project Components

The project would include demolition of the on-site residence at 280 Casa Grande Road, retention of the existing residence at 270 Casa Grande Road, development of 62 dwelling units, construction of various on-site road and utility improvements, landscaping, and a new off-site public multi-use pathway, with a bridge connection over the Creek. The project would require City approval of a Vesting Tentative Parcel Map, Site Plan and Architectural Review, and a Tree Removal Permit. In addition, the project would require FEMA approval of a CLOMR, as well as other approvals from responsible and trustee agencies, including but not necessarily limited to, CDFW approval of a 1600 Lake and Streambed Alteration Agreement and RWQCB approval of a NPDES Construction General Permit and NPDES Phase II MS4 General Permit. The project components, along with all required entitlements and approvals, are described in the following sections.

Vesting Tentative Parcel Map

The project would include a Vesting Tentative Parcel Map, in accordance with Petaluma Municipal Code (PMC) Chapter 20.18, to establish a single-lot parcel (Parcel 1) to allow the sale of the

proposed dwelling units as condominiums and a 0.637-acre Remainder that would not be a part of the proposed residential community. The purpose of the Remainder is to allow the property owner of 270 Casa Grande Road to retain their residence and continue to live on the property. As shown in Figure 3, following demolition of the other on-site residence in the site's western portion, the proposed 62 dwelling units would be constructed across three blocks (Blocks 1, 2, and 3). Block 1 units would be arranged in tri-plex configurations with a building height of 33 feet and four inches and designed in accordance with two plan types (see Figure 4). Each plan would consist of three floors, featuring an entryway and covered parking garage on the first floor; kitchen, dining, and living room areas, as well as a deck on the second floor; and either two or three bedrooms on the third floor. Units within Blocks 2 and 3 would primarily be arranged in duet unit configurations with building heights ranging from 23 feet and one inch to 26 feet and one inch and designed in accordance with five plan types. Each plan would consist of two floors and include an entryway, porch, covered parking garage, kitchen, dining area, living room, and powder room on the first floor. Second floors would include three bedrooms, two bathrooms, and a laundry area. A portion of the Block 2 and 3 units would also include a loft area on the second floor, depending on the plan type. Table 2 summarizes the unit layouts within each block.

Table 2
Unit Layout Summary

Units	Bedrooms	Garage (sf)	Living Area (sf)	Porch/Deck (sf)	Usable Open Space (sf)
Block 1					
24	2-3	470-562	1,312-1,458	63-80	304-811
Blocks 2 and 3 Without Loft					
12	3	231	1,395	94	684-1,132
Blocks 2 and 3, With Loft					
26	3	241	1,660	94	547-1,299

All new dwellings would be located beyond the 50-foot setback that applies to new development when adjacent to a creek (in accordance with Petaluma General Plan Policy 4-P-1, which prohibits development from occurring within 50 feet of any tributary of the Petaluma River). A 488-square-foot (sf) portion of the property, designated as Parcel A on the Vesting Tentative Parcel Map, along the Casa Grande Road frontage, would be dedicated to the City of Petaluma for street right-of-way (ROW).

Access, Circulation, and Parking

Access to the project site would be provided by two new entries from Casa Grande Road, as shown in Figure 5. From the two entries, a new internal looped private street would extend eastward into the project site. The new street would provide access to all proposed units, as well as the existing residence at 270 Casa Grande Road, and be comprised of two 10-foot-wide driving lanes along all segments. In addition, an eight-foot-wide parking lane would be provided along the street's northern segment to allow for designated on-street parallel parking for various Block 1 units. It should be noted that on-site bicycle lanes are not proposed.

A rolled curb and gutter would be constructed along both sides of the internal street segments that do not include on-street parking. In areas adjacent to on-street parking, a curb and gutter would be constructed, in accordance with Standard 203 of the City of Petaluma Design and Construction Standards.

Figure 3
Vesting Tentative Parcel Map

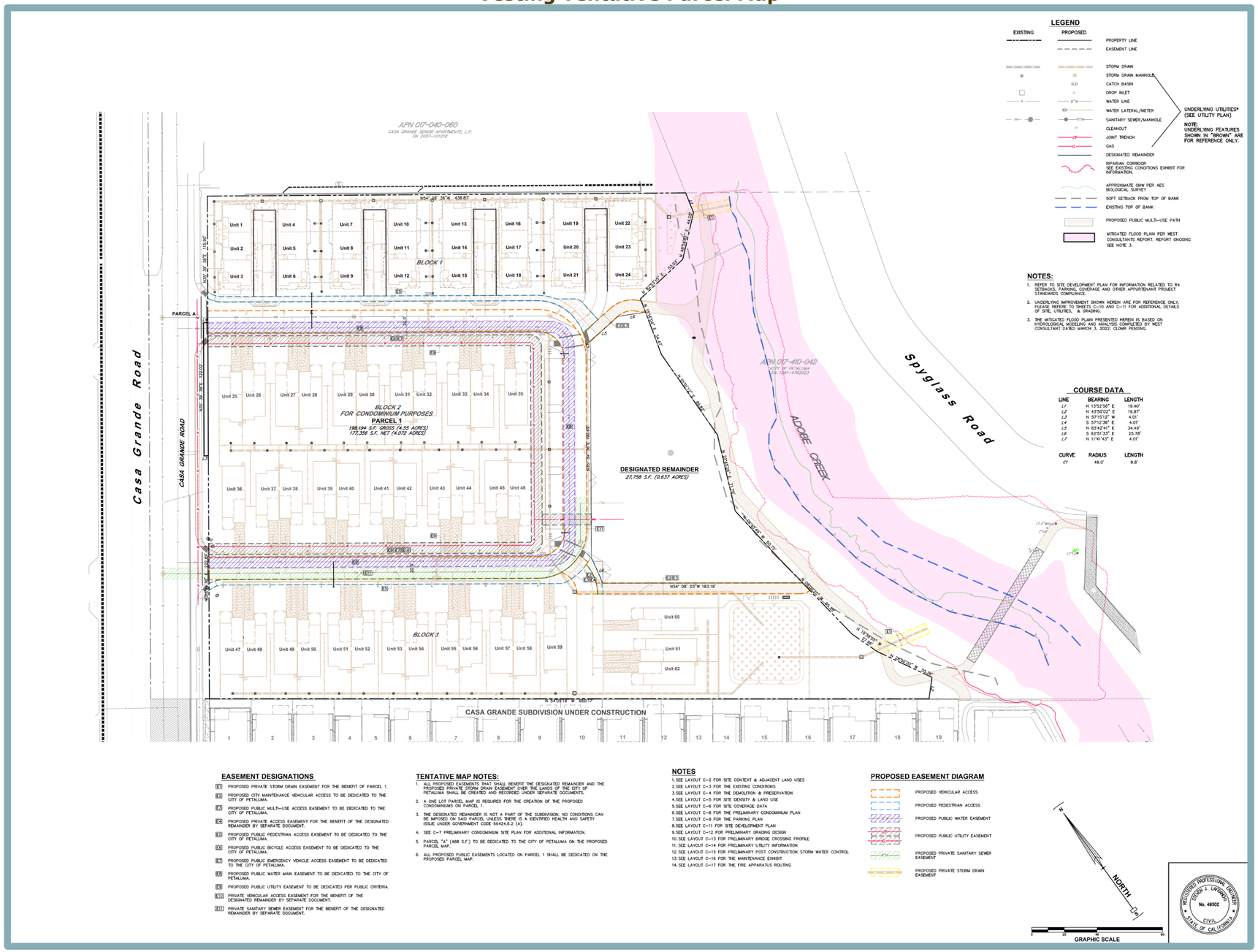
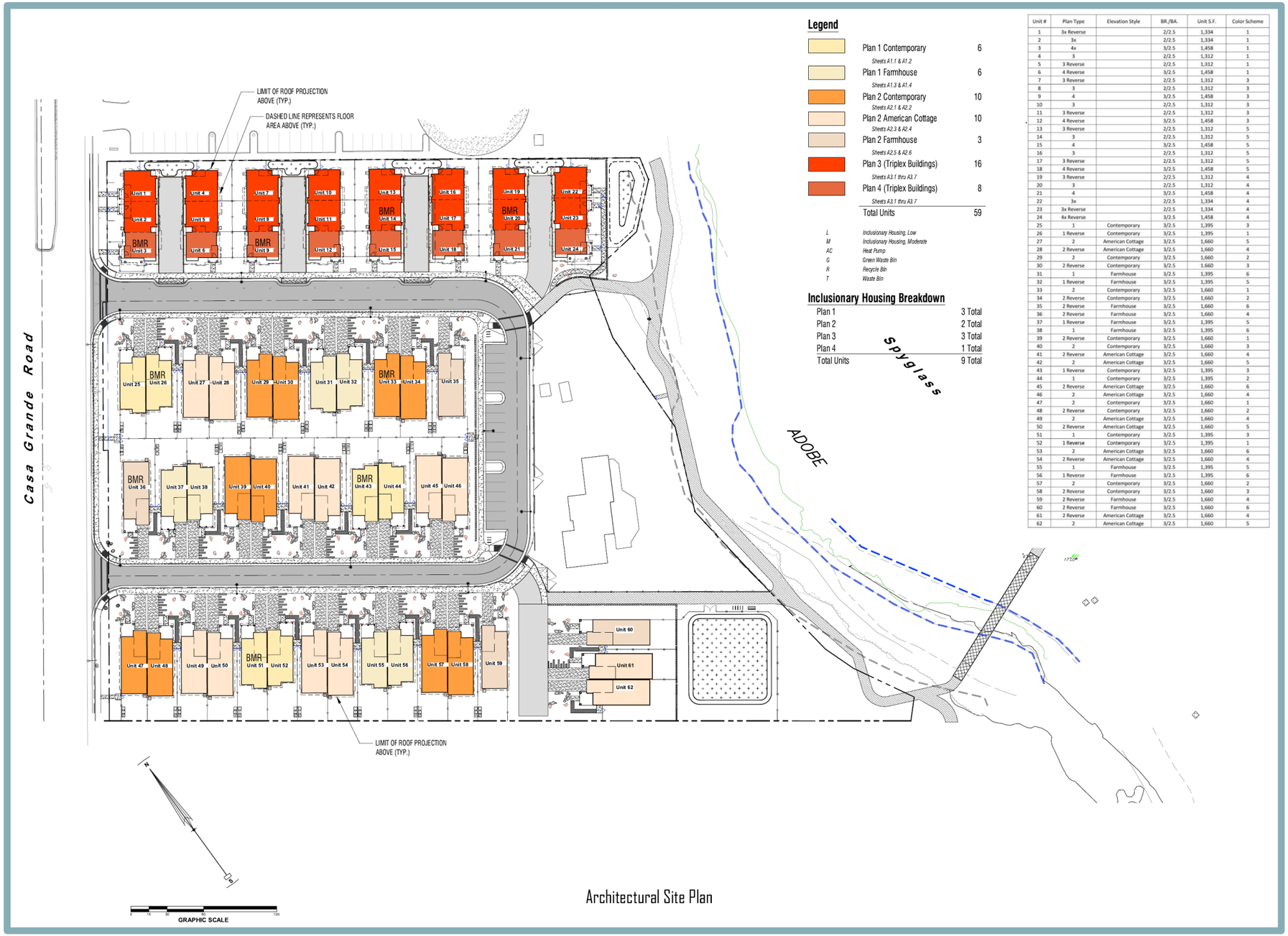


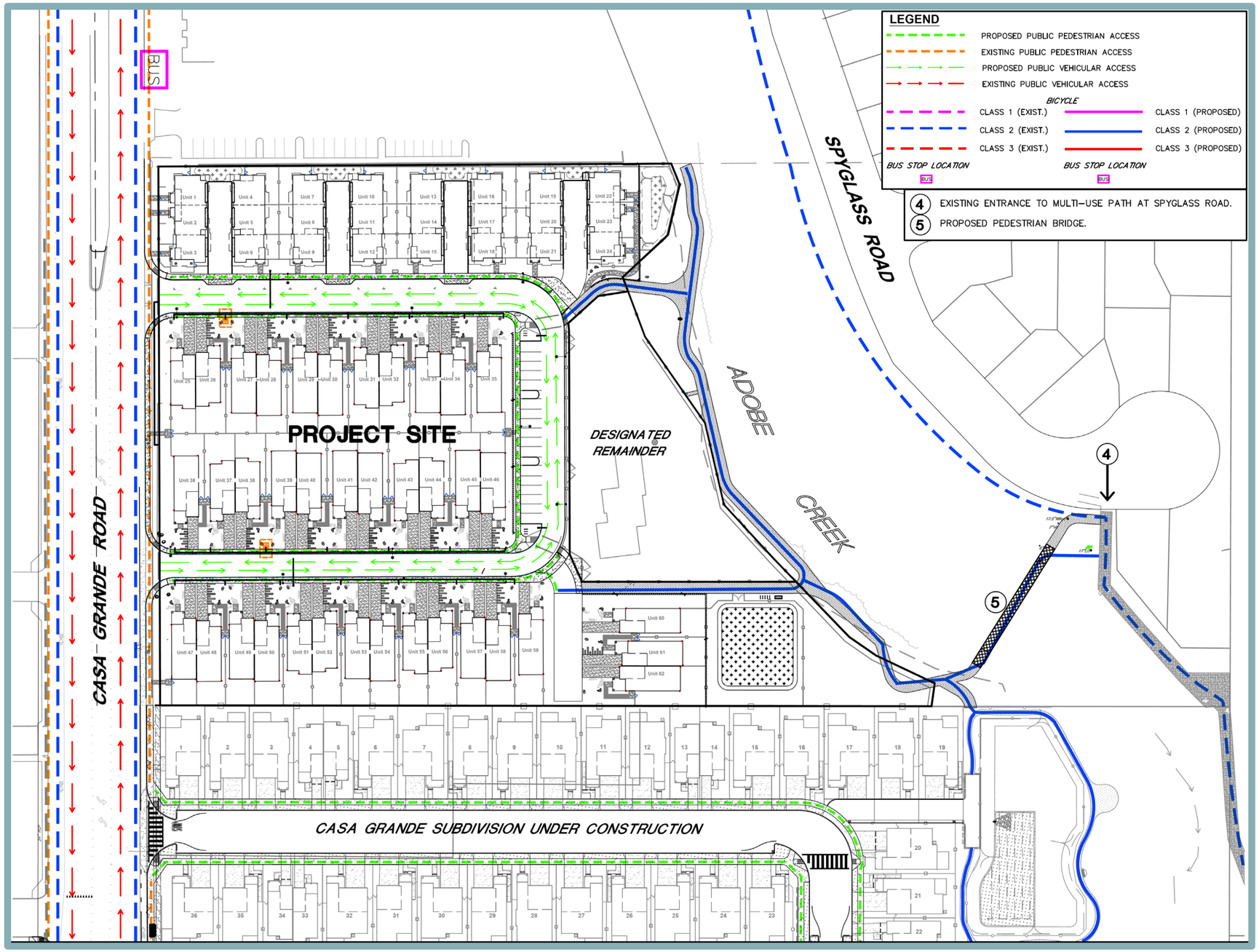
Figure 4
Architectural Site Plan



Unit #	Plan Type	Elevation Style	BR./BA.	Unit S.F.	Color Scheme
1	3x Reverse		2/2.5	1,334	1
2	3x		2/2.5	1,334	1
3	4x		3/2.5	1,458	1
4	3		2/2.5	1,312	1
5	3 Reverse		2/2.5	1,312	1
6	4 Reverse		3/2.5	1,458	1
7	3 Reverse		2/2.5	1,312	3
8	3		2/2.5	1,312	3
9	4		3/2.5	1,458	3
10	3		2/2.5	1,312	3
11	3 Reverse		2/2.5	1,312	3
12	4 Reverse		3/2.5	1,458	3
13	3 Reverse		2/2.5	1,312	5
14	3		2/2.5	1,312	5
15	4		3/2.5	1,458	5
16	3		2/2.5	1,312	5
17	3 Reverse		2/2.5	1,312	5
18	4 Reverse		3/2.5	1,458	5
19	3 Reverse		2/2.5	1,312	4
20	3		2/2.5	1,312	4
21	4		3/2.5	1,458	4
22	3x		2/2.5	1,334	4
23	3x Reverse		2/2.5	1,334	4
24	4x Reverse		3/2.5	1,458	4
25	1	Contemporary	3/2.5	1,395	3
26	1 Reverse	Contemporary	3/2.5	1,395	1
27	2	American Cottage	3/2.5	1,660	5
28	2 Reverse	American Cottage	3/2.5	1,660	4
29	2	Contemporary	3/2.5	1,660	2
30	2 Reverse	Contemporary	3/2.5	1,660	3
31	1	Farmhouse	3/2.5	1,395	6
32	1 Reverse	Farmhouse	3/2.5	1,395	5
33	2	Contemporary	3/2.5	1,660	1
34	2 Reverse	Contemporary	3/2.5	1,660	2
35	2 Reverse	Farmhouse	3/2.5	1,660	6
36	2 Reverse	Farmhouse	3/2.5	1,660	4
37	1 Reverse	Farmhouse	3/2.5	1,395	5
38	1	Farmhouse	3/2.5	1,395	6
39	2 Reverse	Contemporary	3/2.5	1,660	1
40	2	Contemporary	3/2.5	1,660	3
41	2 Reverse	American Cottage	3/2.5	1,660	4
42	2	American Cottage	3/2.5	1,660	5
43	1 Reverse	Contemporary	3/2.5	1,395	3
44	1	Contemporary	3/2.5	1,395	2
45	2 Reverse	American Cottage	3/2.5	1,660	6
46	2	American Cottage	3/2.5	1,660	4
47	2	Contemporary	3/2.5	1,660	1
48	2 Reverse	Contemporary	3/2.5	1,660	2
49	2	American Cottage	3/2.5	1,660	4
50	2 Reverse	American Cottage	3/2.5	1,660	5
51	1	Contemporary	3/2.5	1,395	3
52	1 Reverse	Contemporary	3/2.5	1,395	1
53	2	American Cottage	3/2.5	1,660	6
54	2 Reverse	American Cottage	3/2.5	1,660	4
55	1	Farmhouse	3/2.5	1,395	5
56	1 Reverse	Farmhouse	3/2.5	1,395	6
57	2	Contemporary	3/2.5	1,660	2
58	2 Reverse	Contemporary	3/2.5	1,660	3
59	2 Reverse	Farmhouse	3/2.5	1,660	4
60	2 Reverse	Farmhouse	3/2.5	1,660	6
61	2 Reverse	American Cottage	3/2.5	1,660	4
62	2	American Cottage	3/2.5	1,660	5

Architectural Site Plan

Figure 5
Circulation Plan



In addition, five-foot-wide sidewalks would be constructed along the street in accordance with the applicable City of Petaluma Street Construction Standards, where a pedestrian easement would exist to connect the public sidewalk along Casa Grande Road to the public path along the Creek and the bridge over the Creek. Four-foot-wide sidewalks would be provided along private portions of the street. The portion of the street that fronts the Remainder area would not include a sidewalk.

The project would include 187 total parking spaces (see Figure 6). A total of 86 covered parking spaces would be provided within the proposed garages. A total of 38 standard uncovered parking spaces would be provided on the driveways within Blocks 2 and 3, as well as a total of 38 compact uncovered parking spaces within the permeable areas adjacent to each driveway. A total of 25 on-street parking spaces would be provided along the main access street, east of the Block 2 units. Finally, the project would include space for bicycle parking within each garage, which would consist of mounting hardware for a minimum of two bicycles. In addition, the project includes an off-site public multi-use pathway with a bridge connection over the Creek, which is discussed further below.

Utilities and Public Services

The project would require the removal of the existing on-site septic system, as well as any private well(s) that could potentially be located within the project site. Water and sewer service would be provided to the new dwellings and existing residence at 270 Case Grande Road by the City of Petaluma through new connections to the existing eight-inch water and sewer mains in Casa Grande Road (see Figure 7). The City purchases Russian River water from the Sonoma Water, which supplies water to Petaluma and seven other water contractors. From the point of connection, new eight-inch water and sewer lines would be extended into the site within the new internal street. From the new eight-inch water line, new water service laterals would be extended to each unit, including the existing residence at 270 Casa Grande Road. Similarly, all units would connect to the new eight-inch sewer line by way of new sanitary sewer laterals. All new water infrastructure would be designed in accordance with the City's Water System Design Guidelines. All new sewer infrastructure would be designed in accordance with the applicable sections of the City's Sewer System Construction Standards.

The project would also include new on-site stormwater facilities to retain and treat stormwater runoff from the site's proposed impervious surfaces. The project site's stormwater facilities would be dispersed across five drainage management areas (DMAs) (see Figure 8). DMAs 1 through 4 would encompass the Block 1 units and would each contain corresponding Basin Retention Areas (BRAs) 1 through 4. DMA 5 would encompass the new internal street, Blocks 2 and 3 units, and BRA 5. Within DMAs 1 through 4, runoff from impervious surfaces would be directed to grassy areas, where flows would be collected by inlets and conveyed by way of private storm drain lines to each DMA's BRA for retention and treatment. Following retention and treatment, flows would be metered and released to the Creek. In addition, a floodwater detention basin would be constructed immediately east of DMA 4 to accept surface flow from waters overtopping the Creek bank or backing up through the storm drain system. Similarly, within DMA 5, runoff would be directed to inlets installed in each dwelling unit's backyard area and to gutters installed along the new internal street. From the inlets and gutters, flows would be conveyed by way of new private storm drain lines to BRA 5 for retention and treatment. From BRA 5, treated flows would be metered to the Creek. All new storm drain infrastructure would be designed in accordance with the applicable Sonoma Water (formerly Sonoma County Water Agency) standards.

Electrical service would be provided to the project by Pacific Gas and Electric Company (PG&E). The existing aboveground utility lines located along Casa Grande Road adjacent to the project site's western boundary would be undergrounded as part of the project. All new infrastructure would similarly be installed below grade. The project would not use natural gas.

Figure 6
Parking Plan

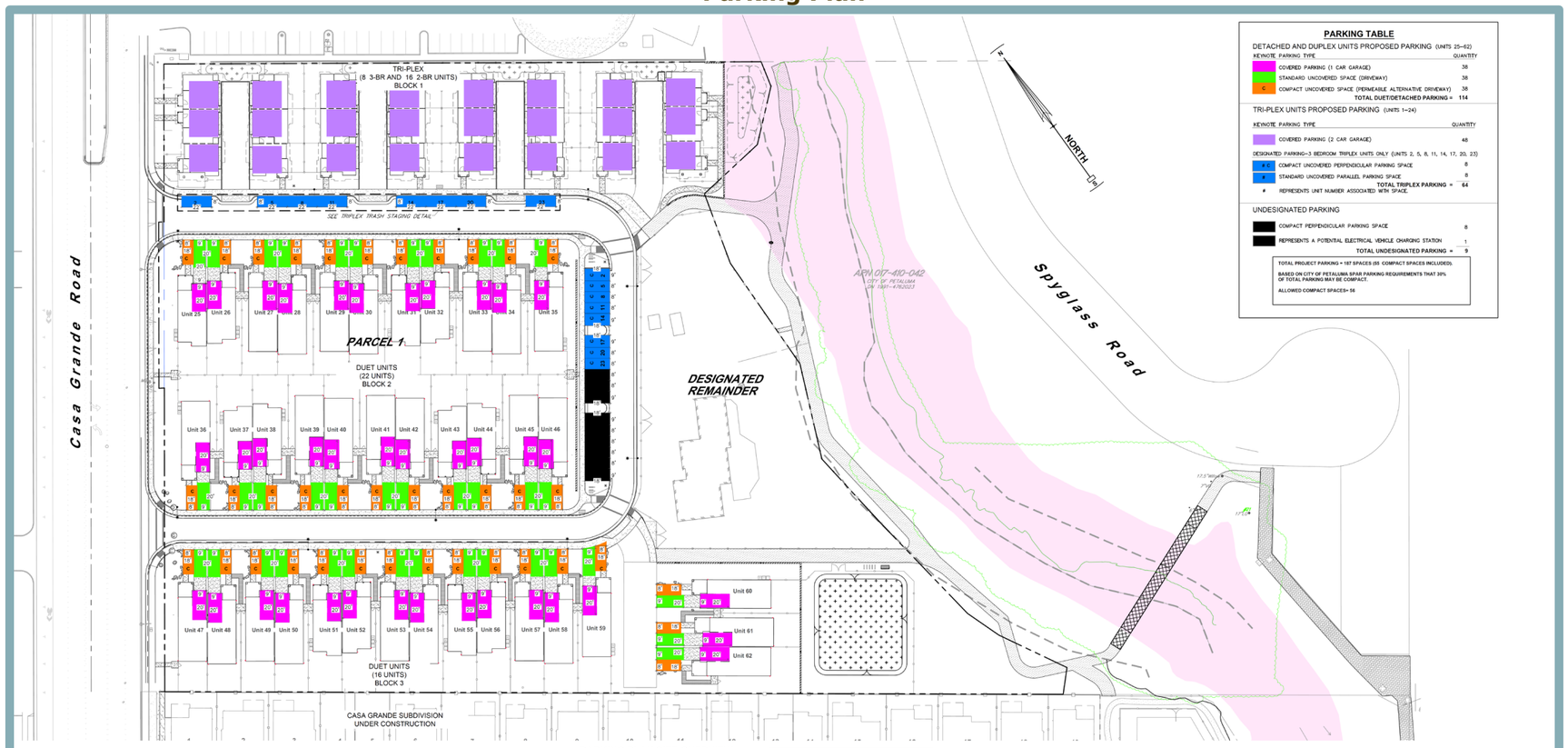


Figure 7
Preliminary Utility Plan

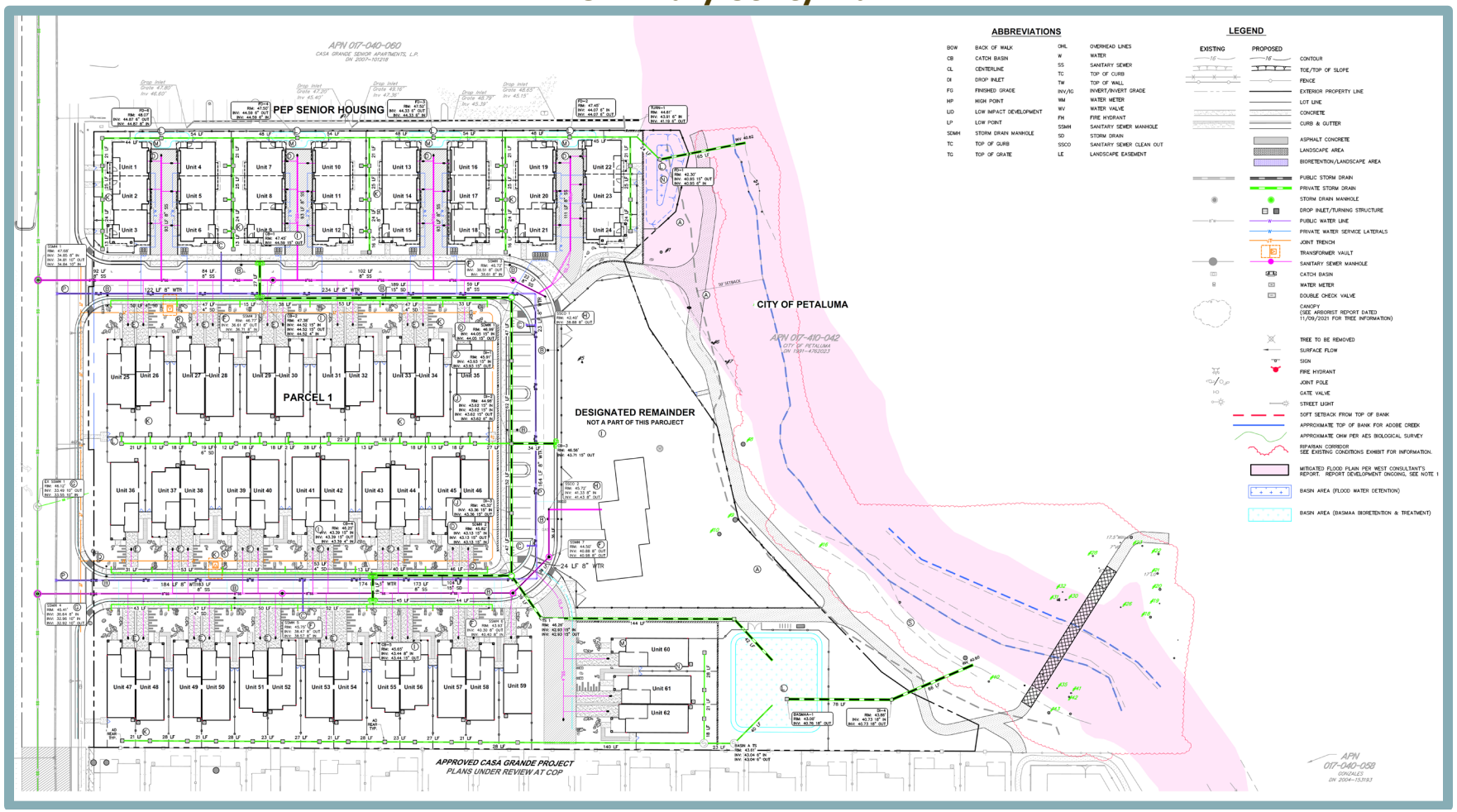
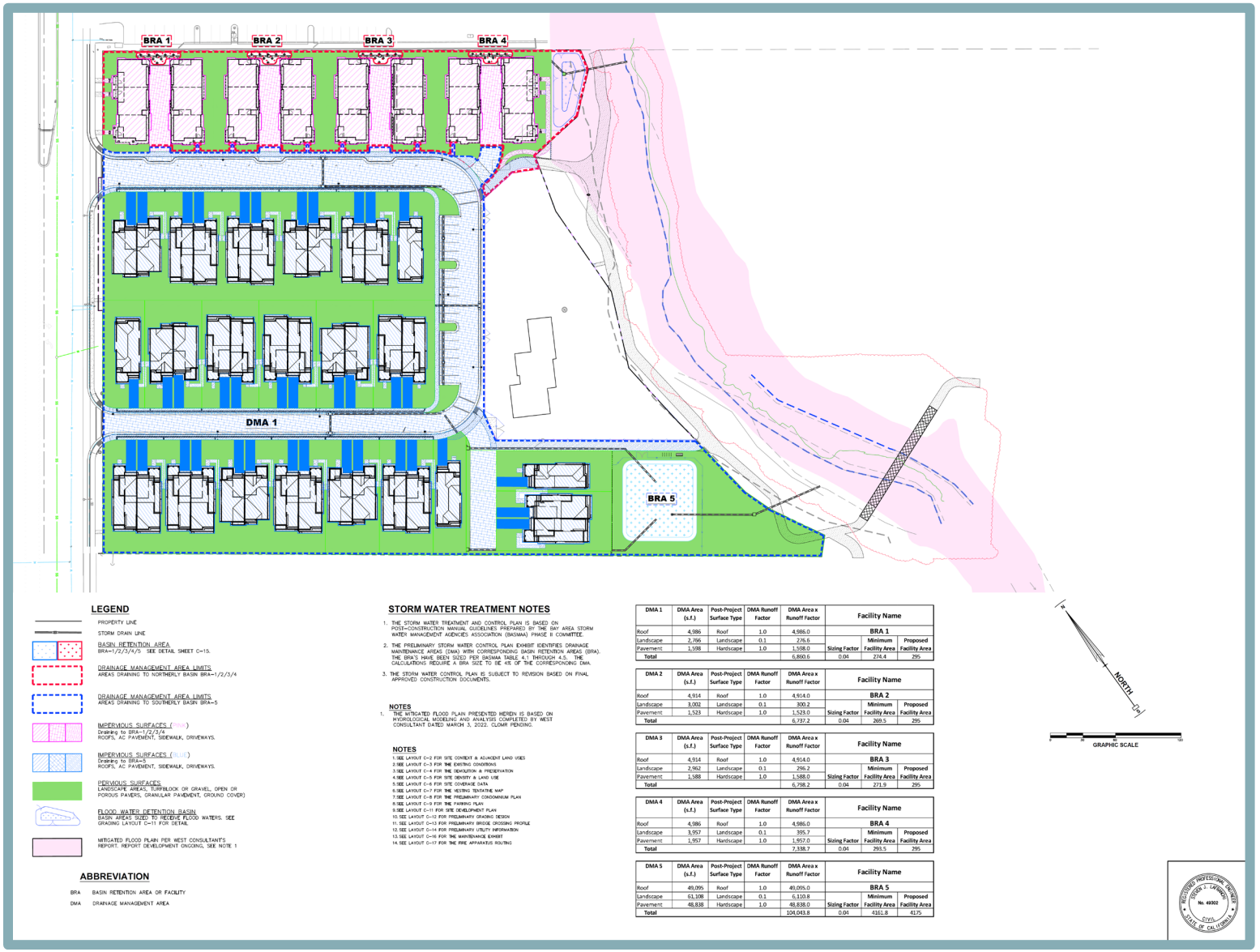


Figure 8
Post-Construction Stormwater Control and Treatment Plan



The City of Petaluma contracts with Recology for recycling, organics, and solid waste services. The project would be served by the Petaluma Police Department (PPD), Petaluma Fire Department (PFD), the Petaluma City Elementary School District (PCESD) (grades K-8), and the Petaluma Joint Union High School District (PJUHSD) (grades 9-12). The PPD is stationed at 969 Petaluma Boulevard North, 2.6 miles west of the project site. The nearest PFD station to the project site is Station 3 at 831 South McDowell Boulevard, 0.8-mile west of the site.

Open Space, Landscaping, and Fencing

Each dwelling unit would include UOS in the form of semi-private or private yard areas. The UOS would range in size from 304 sf to 811 sf for Block 1 units, 684 sf to 1,132 sf for Block 2 units, and 547 sf to 1,299 sf for Block 3 units.

The project would include new landscaping along the project's Casa Grande Road frontage, as well as along front and side yard areas of on-site residential units, the bioretention basin in the site's southern portion, and in open space areas adjacent to the Creek's riparian corridor, the latter of which includes areas within the City-owned parcel that encompasses the Creek (see Figure 9). Newly planted trees adjacent to the Creek would consist of native 24-inch box trees such as coast live oak, valley oak, and California Buckeye. In addition, new trees adjacent to the proposed structures would include 24-inch box trees such as marina arbutus and Chinese pistache, 15-gallon trees such as pink dawn chiltalpa and swan hill fruitless olive, and various-sized shrubs, perennials, and grasses. Final species selection would be in accordance with Petaluma Implementing Zoning Ordinance (IZO) Section 14.010.

The project would include various types of fencing throughout the project site (see Figure 10). While the majority of the project frontage along Casa Grande Road would not include fencing, small portions of the frontage west of Block 1 would include segments of 42-inch-tall wood and wire fencing interspersed with segments of eight-foot, double-sided, wood and wire fencing. In addition, the project would construct an eight-foot, double-sided, wood and wire fence along the northern property line, as well as along the eastern and southern boundaries of the Remainder and the eastern boundary of Block 3. The Remainder's western boundary, along the new internal street frontage, would include 42-inch-tall wood and wire fencing. The backyard areas of the proposed units would be separated by six-foot-tall wood fencing.

In addition, the boundaries of the southern bioretention basin and northern detention basin would be lined with three-foot-tall split-rail fencing in areas facing the proposed off-site pathway. All fencing would be designed in accordance with IZO Section 13.020.

Off-Site Improvements

The project includes an off-site public multi-use pathway with a bridge connection over the Creek (see Figure 3 and Figure 11). The multi-use pathway would be 10 feet in width and installed along the project site's eastern boundary, west of the Creek. The pathway would connect to the Casa Grande Subdivision to the south and be stubbed at the northern property line, north of which is located the Casa Grande Senior Apartments. The project's internal pathway system would connect to the multi-use pathway at two locations, generally north and south of the existing residence at 270 Casa Grande Road. Although the project site would be private, it should be noted that the project would dedicate a public pedestrian easement to provide access to the pathway and bridge (note: the pathway and bridge would be privately maintained).

Figure 9
Preliminary Landscape Plan

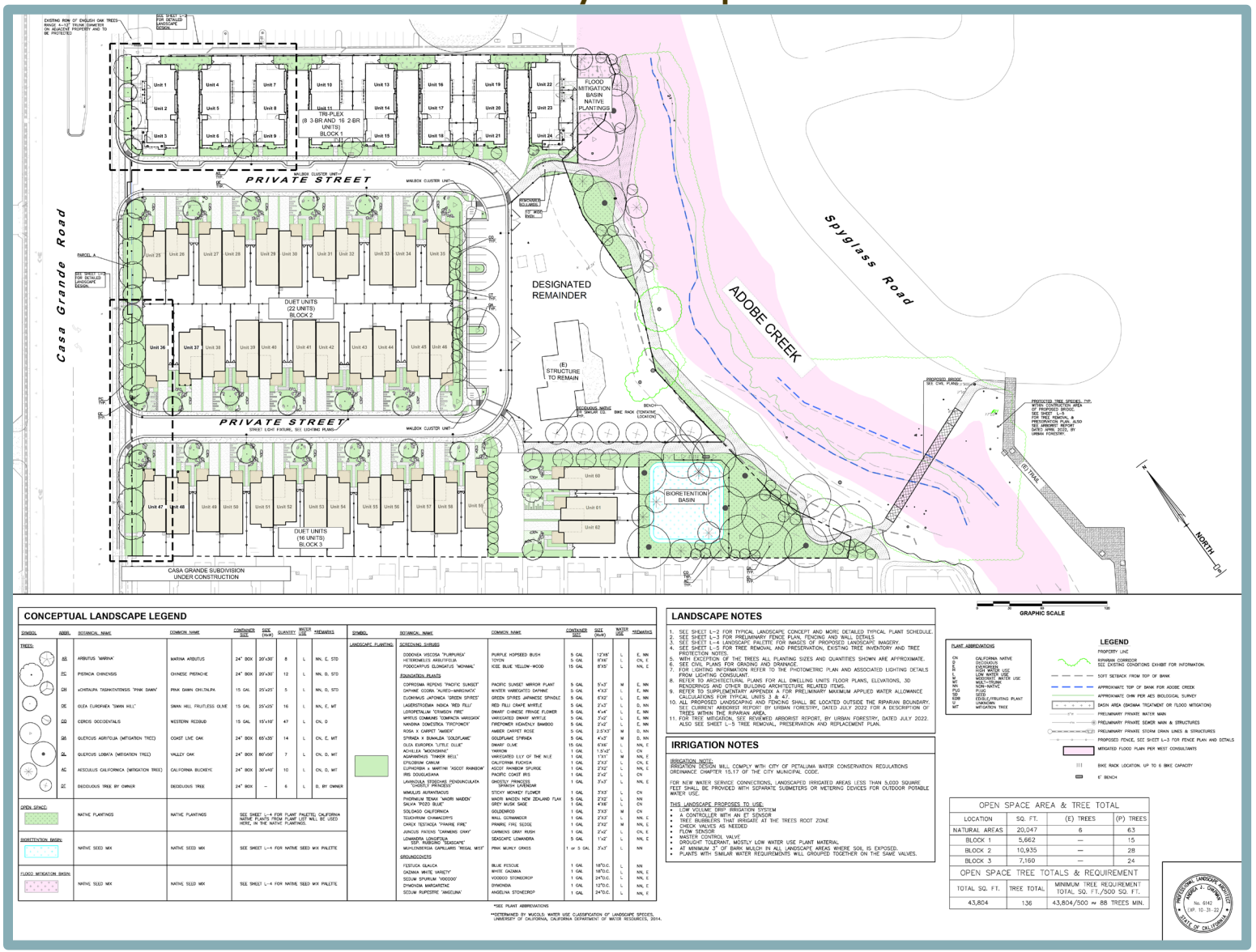


Figure 10
Preliminary Fence Plan

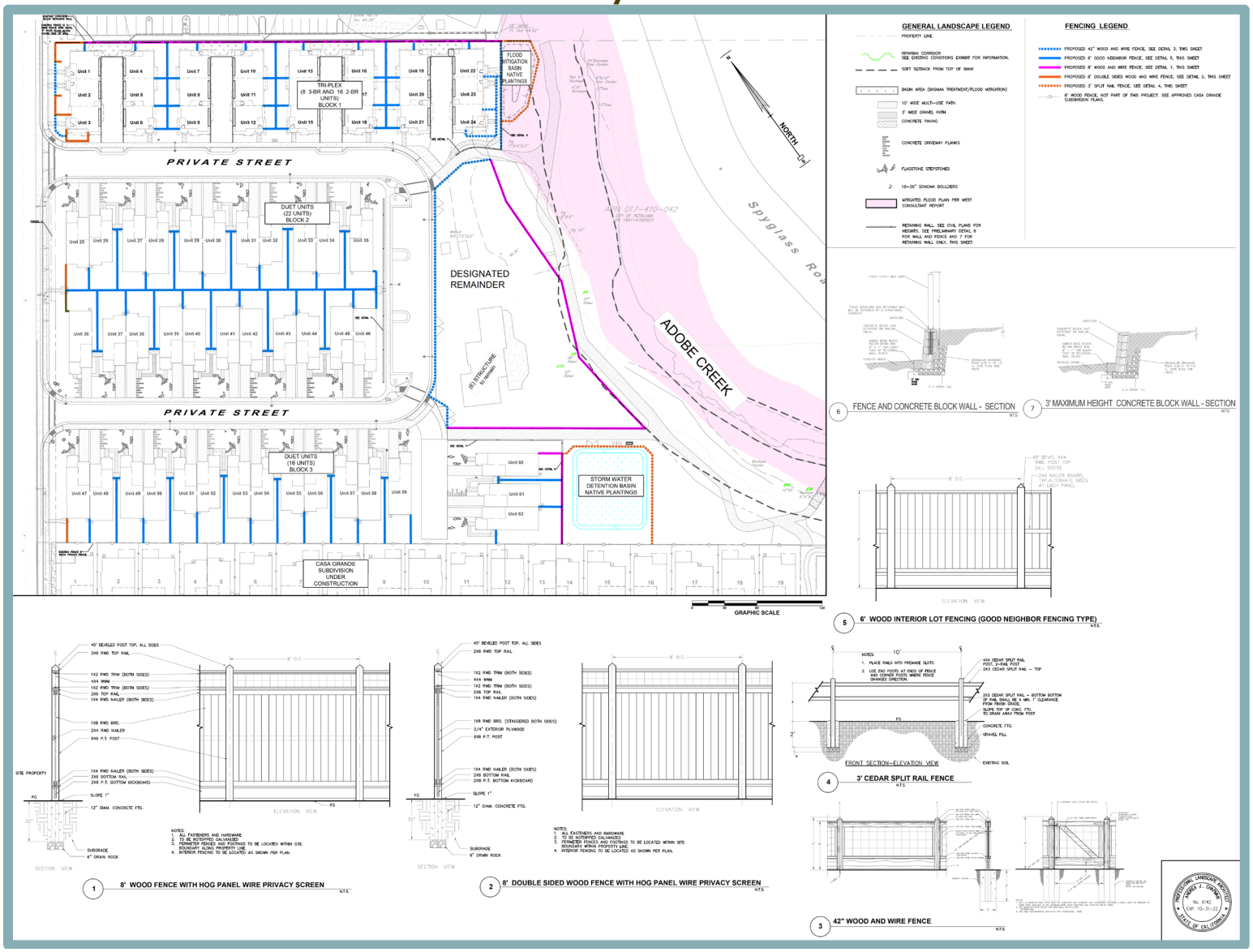
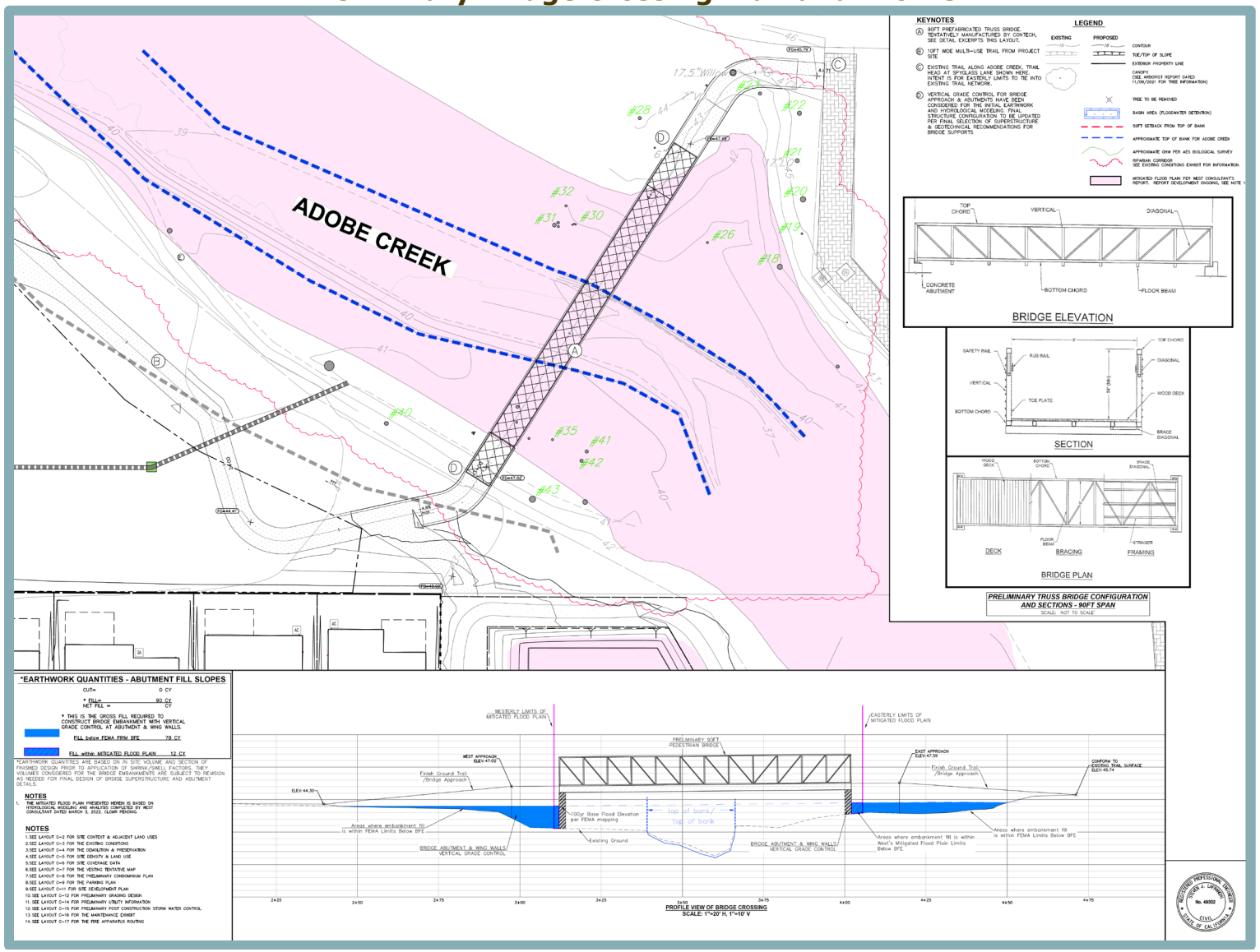


Figure 11
Preliminary Bridge Crossing Plan and Profile



The bridge, located on a City-owned parcel, would connect to the proposed multi-use pathway along the west side of the Creek, as well as the existing path along Spyglass Road, on the east side of the Creek. The bridge would span the Creek and be located atop bridge abutments. The bridge would be 90 feet in length, eight feet in width, and composed of steel framing, as well as wood decking for the walking surface. Safety rails standing a minimum of 4.5 feet in height would line each side of the bridge. The western and eastern approaches, as well as the bridge abutments and deck, would be elevated above the FEMA Flood Insurance Rate Map (FIRM) 100-year floodplain base flood elevation. The project would require 90 cubic yards (CY) of net fill for the abutment fill slopes, including 78 CY placed below the 100-year floodplain base flood elevation.

Inclusionary Housing

In accordance with IZO Section 3.040, the project would reserve at least 15 percent of the proposed 62 dwelling units as Below Market Rate (BMR) units, with half of the BMR units reserved for low-income households and half reserved for moderate-income households. Sale prices for the BMR units would be subject to the limitations associated with Area Median Income (AMI) of Sonoma County. The sale prices for the market rate units would be subject to market conditions at the time of project construction.

Protected Trees

The project would require the removal of 18 trees, including six unprotected trees outside the riparian dripline and 12 trees that are designated as protected by IZO Section 17.040 (see Figure 12). Table 3 provides a summary of all protected trees proposed for removal.

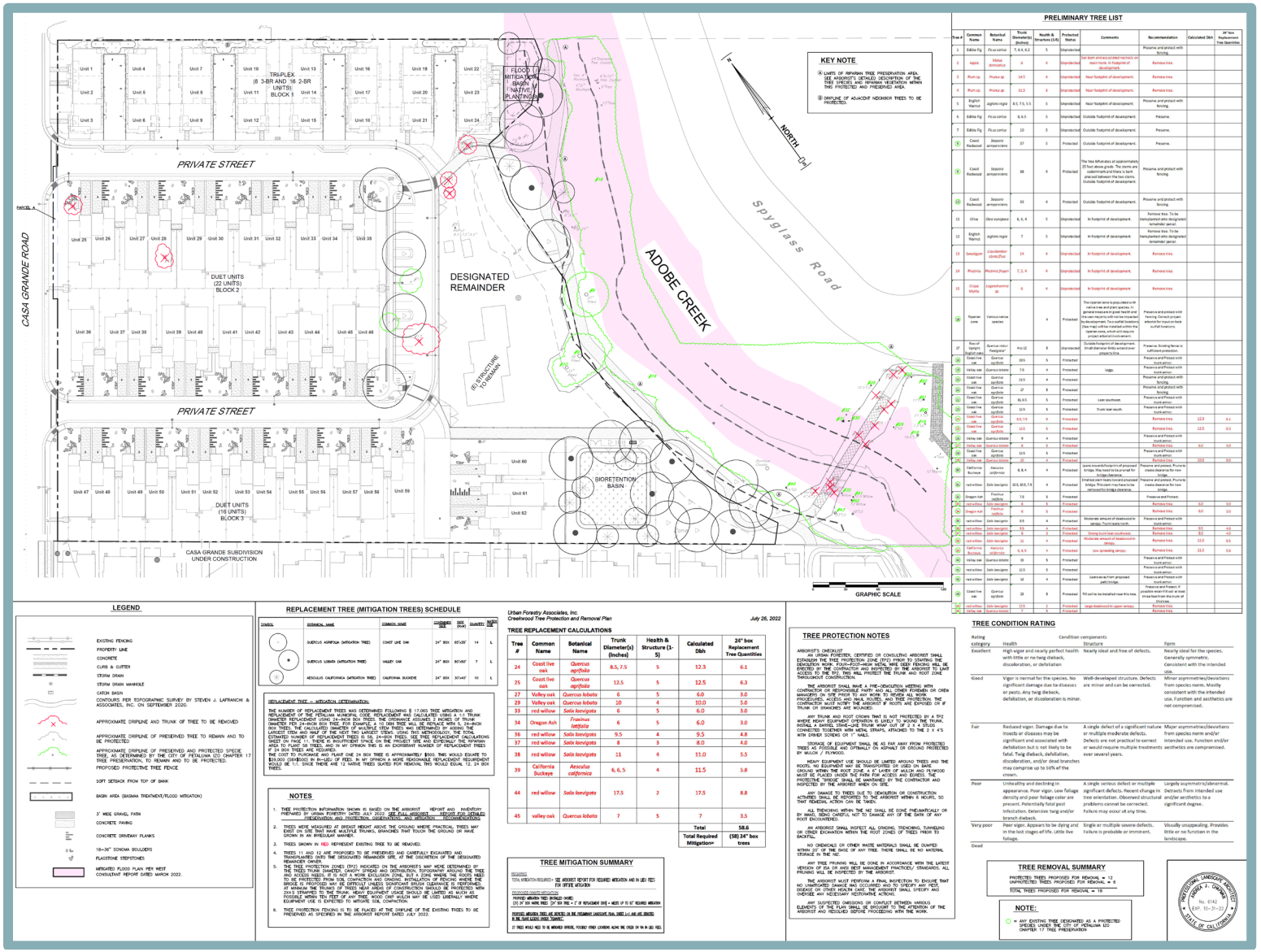
Table 3
Protected Trees Proposed for Removal

No.	Common Name	Botanical Name	Trunk Diameter (inches)	Health & Structure (0-5)[1]
24	Coast Live Oak	Quercus agrifolia	8.5, 7.5	5
25	Coast Live Oak	Quercus agrifolia	12.5	5
27	Valley Oak	Quercus lobata	6	5
29	Valley Oak	Quercus lobata	10	4
33	Red Willow	Salix laevigata	6	5
34	Oregon Ash	Fraxinus latifolia	6	5
36	Red Willow	Salix laevigata	9.5	4
37	Red Willow	Salix laevigata	8	3
38	Red Willow	Salix laevigata	11	4
39	California Buckeye	Aesculus californica	6, 6, 5	4
44	Red Willow	Salix laevigata	17.5	2
45	Valley Oak	Quercus lobata	7	5

Note: The Health & Structure column includes a rating for condition, based on The Guide for Plant Appraisal, 10th Edition. The numeric scale ranges from 5 (being the highest) to 0 (the worst condition, dead). Rating 2 (Poor) indicates the tree has a single or multiple serious structural defects and is unhealthy and declining in appearance. Rating 3 (Fair) indicates the tree has a single serious structural defect or multiple moderate defects and reduced vigor. Rating 4 (Good) indicates the tree has minor structural defects that can be corrected and normal vigor. Rating 5 (Excellent) indicates the tree is free of structural defects and has nearly perfect health.

Three of the unprotected trees are located within the footprint of the proposed Block 2 units and internal street. The remaining three unprotected trees are located near the proposed location of Unit 24. The 12 protected trees that would require removal are generally located within the alignment of the proposed off-site bridge, within the City-owned parcel associated with the Creek.

Figure 12
Tree Removal and Preservation Plan



Tree #	Common Name	Botanical Name	Trunk Diameter(s) (Inches)	Health & Structure (1-5)	Calculated Dbh	24" box Replacement Tree Quantities
24	Coast live oak	*Quercus agrifolia*	8.5, 7.5	5	12.3	6.1
25	Coast live oak	*Quercus agrifolia*	12.5	5	12.5	6.3
27	Valley oak	*Quercus lobata*	6	5	6.0	3.0
29	Valley oak	*Quercus lobata*	10	4	10.0	5.0
33	red willow	*Salix lasvigata*	6	5	6.0	3.0
34	Oregon Ash	*Fraxinus latifolia*	6	5	6.0	3.0
36	red willow	*Salix lasvigata*	9.5	4	9.5	4.8
37	red willow	*Salix lasvigata*	8	3	8.0	4.0
38	red willow	*Salix lasvigata*	11	4	11.0	5.5
39	California buckeye	*Aesculus californica*	6, 6, 5	4	11.5	5.8
44	red willow	*Salix lasvigata*	17.5	2	17.5	8.8
45	valley oak	*Quercus lobata*	7	5	7	3.5
				Total	58.6	
				Total Required Mitigation=	(58) 24" box trees	

Rating category	Condition components: Health	Structure	Form
Excellent	High vigor and nearly perfect health with little or no twig dieback, discoloration, or defoliation	Nearly ideal and free of defects.	Nearly ideal for the species. Generally symmetric. Consistent with the intended use.
Good	Vigor is normal for the species. No significant damage due to diseases or pests. Any twig dieback, defoliation, or discoloration is minor.	Well-developed structure. Defects are minor and can be corrected.	Minor asymmetries/deviations from species norm. Mostly consistent with the intended use. Function and/or aesthetics are not compromised.
Fair	Reduced vigor. Damage due to insects or diseases may be significant and associated with defoliation but is not likely to be fatal. Twig dieback, defoliation, discoloration, and/or dead branches may comprise up to 50% of the crown.	A single defect of a significant nature or multiple moderate defects. Defects are not practical to correct or would require multiple treatments over several years.	Major asymmetries/deviations from species norm and/or intended use. Function and/or aesthetics are compromised.
Poor	Unthrifty and declining in appearance. Poor vigor. Low foliage density and poor foliage color are present. Potentially fatal pest infestation. Extensive twig and/or branch dieback.	A single serious defect or multiple significant defects. Recent change in tree orientation. Observed structural problems cannot be corrected. Failure may occur at any time.	Largely asymmetric/abnormal. Detracts from intended use and/or aesthetics to a significant degree.
Very poor	Poor vigor. Appears to be dying and in the last stages of life. Little live foliage.	Single or multiple severe defects. Failure is probable or imminent.	Visually unappealing. Provides little or no function in the landscape.
Dead			

In addition to the above, two unprotected trees currently located where the perpendicular parking is proposed would be relocated on-site within the Remainder area. Protected trees located in proximity to the off-site bridge and not proposed for removal could be subject to pruning, which would be determined at the time of construction by the project arborist.

Additional trees in close proximity to the bridge may require pruning during construction; further tree impact analysis will be included in the EIR. In accordance with IZO Section 17.060, the removal, cutting down, or otherwise destruction of a protected tree requires a Tree Removal Permit issued by the City of Petaluma Community Development Department. All other trees in on-site areas and along the riparian corridor would be retained and protected in place during construction.

The proposed project would include the planting of 130 new trees on-site, which includes those planted for the purposes of mitigating project impacts to protected trees.

Site Plan and Architectural Review

Pursuant to IZO Section 24.050, Site Plan and Architectural Review is required for proposed uses of more than one dwelling unit per lot, except for accessory dwellings. The purpose of the review is to ensure compliance with the development standards set forth by the IZO and to promote the orderly and harmonious development of the City. The project would consist of 62 units on a single lot. As such, the project is subject to Site Plan and Architectural Review.

Conditional Letter of Map Revision

As discussed above, the project site is within Special Flood Hazard Area (SFHA) Zone AE. Zone AE is defined by FEMA as an area within the 100-year floodplain; however, the current Zone AE designation is based on outdated modeling. The project applicant is in the process of requesting a CLOMR from FEMA.

As part of obtaining a CLOMR, West Consultants, Inc., the hydrology consultant for the project, is conducting precise mapping of project site elevations to determine the current extent of the 100-year floodplain and hydraulic modeling to demonstrate limits of the 100-year floodplain. Subsequent to the CLOMR, FEMA would need to issue a LOMR officially modifying the effective FIRM to modify the floodplain limits as warranted.

Requested Entitlements

The project would require City approval of the following:

- Vesting Tentative Parcel Map;
- Site Plan and Architectural Review; and
- Tree Removal Permit.

The project would require the following approvals/permits from other responsible agencies:

- Conditional Letter of Map Revision (FEMA);
- Section 401 Water Quality Certification (RWQCB – San Francisco Bay Region);
- Section 1600 Lake and Streambed Alteration Agreement (CDFW-Region 3);
- NPDES Construction General Permit (RWQCB – San Francisco Bay Region); and
- NPDES Phase II MS4 General Permit (RWQCB – San Francisco Bay Region).

G. ENVIRONMENTAL CHECKLIST

The following Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the project. A discussion follows each environmental issue identified in the checklist. For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

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

Discussion

a. Examples of typical scenic vistas include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other area designated for the express purpose of viewing and sightseeing. In general, a project's impact to a scenic vista would occur if development of the project would substantially change or remove a scenic vista. The Petaluma General Plan notes that the City has a picturesque setting along the Petaluma River, with a backdrop of hills to the west and south, and vistas of Sonoma Mountain to the east; however, the General Plan does not officially designate scenic vistas within the City limits. Figure 3.11-1 of the General Plan EIR uses viewpoints from the three following locations to determine potential adverse effects upon scenic resources: the East Washington Street overpass, McNear Peninsula, and Rocky Memorial Dog Park. The project site is not located within the immediate vicinity of the East Washington Street overpass or McNear Peninsula. Although the site is located one mile north of Rocky Memorial Dog Park, due to the intervening development between the two locations and the flat nature of the site, development of the proposed project would not block views of the hills in the surrounding environs.

In addition, the project site has been subjected to previous disturbance associated with the site's existing residences, associated outbuildings, driveways, and grasses that are routinely mowed or grazed. The site does not contain mountain ranges or ridgelines. While the Creek and its associated vegetation form the eastern boundary of the project site, in accordance with Petaluma General Plan Policy 4-P-1, which prohibits development from occurring within 50 feet of any tributary of the Petaluma River, the proposed dwelling units would be located beyond the 50-foot setback that applies to new development when adjacent to a creek. Therefore, development of the project would not have a substantial adverse effect on the Creek and its associated vegetation.

Based on the above information, because established scenic vistas are not located on or adjacent to the project site, the project would not have a substantial adverse effect on a scenic vista. Therefore, the project would result in a ***less-than-significant*** impact.

b. According to the California Department of Transportation (Caltrans) Scenic Highway Mapping System, the nearest officially designated State scenic highway to the project site

is a portion of State Route (SR) 12 located 8.3 miles to the northwest of the City.[3] Given the distance between the two locations, the project site is not viewable from SR 12. Therefore, the project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway and ***no impact*** would occur.

c. The project site is located within the City limits, bound by Casa Grande Road to the west, and is adjacent to the Casa Grande Senior Apartments to the north and the under-construction Casa Grande Subdivision to the south. In addition, a single-family residential neighborhood is located to the east, across from the Creek, and Casa Grande High School and Crinella Park are located to the west, across Casa Grande Road. Therefore, the project site is within an urbanized area, and the relevant threshold is whether the project would conflict with applicable zoning and other regulations governing scenic quality.

The project would be consistent with the uses allowed in the Medium Density Residential land use designation and the R4 zoning district's permitted uses. Pursuant to the City's General Plan, the Medium Density Residential designation provides for a variety of dwelling types, including single-family and multifamily housing, and allows for a density ranging from 8.1 to 18.0 du/ac. The project would result in a density of 15.22 du/ac. In addition, single-family and multifamily residences are both permitted uses within the R4 zone. The proposed dwelling units would be required to be designed in accordance with the R4 Zone Development Standards set forth in Table 4.9 of IZO Section 4.040, including the City's standards for lot size, setbacks, and height limits. The project would include new landscaping along the project's Casa Grande Road frontage, as well as along front and side yard areas of on-site residential units, the bioretention basin in the site's southern portion, and in open space areas adjacent to the Creek's riparian corridor. Newly planted trees would be comprised of 24-inch box trees such as marina arbutus and Chinese pistache, 15-gallon trees such as pink dawn chiltalpa and swan hill fruitless olive, and various-sized shrubs, perennials, and grasses. Final species selection would be in accordance with IZO Section 14.010. In addition, the project would include the installation of various types of fencing throughout the project site (see Figure 10), including segments of 42-inch-tall wood and wire fencing interspersed with segments of eight-foot, double-sided, wood and wire fencing along small portions of the Casa Grande Road frontage west of Block 1; an eight-foot, double-sided, wood and wire fence along the northern property line of the site, as well as the eastern and southern boundaries of the Remainder; and 42-inch-tall wood and wire fencing along the Remainder's western boundary.

Finally, pursuant to IZO Section 24.050, Site Plan and Architectural Review is required for proposed uses of more than one dwelling unit per lot, except for accessory dwellings. The project would consist of 62 units on a single lot as condominiums, and would, therefore, be subject to Site Plan and Architectural Review, which would ensure compliance with the development standards set forth by the IZO.

Based on the above, the project would be required to comply with all applicable regulations and standards set forth by the Petaluma IZO and would be subject to Site Plan and Architectural Review, which would ensure the project would not conflict with applicable

[3] California Department of Transportation. *California Scenic Highway Mapping System*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed June 2022.

zoning and other regulations governing scenic quality. Thus, the project would result in a ***less-than-significant*** impact.

d. The project site is currently developed with two residences and includes limited sources of light and glare associated with the residences. In addition, the project site is bound by Casa Grande Road, which features existing sources of light and glare, including vehicle headlights, light reflecting off vehicle windshields, and street lights. Finally, the project site is within an urbanized setting, which contains existing sources of light and glare associated with the Casa Grande Senior Apartments to the north, the single-family residential neighborhood to the east, and Casa Grande High School and Crinella Park to the west.

The proposed dwelling units would introduce new sources of light and glare associated with residential uses, including light reflecting off vehicle and dwelling unit windows, vehicle headlights, exterior light fixtures, and interior light spilling through windows. IZO Section 21.040(D) establishes that direct glare and indirect glare from buildings in any zoning district must not exceed three footcandles of illuminance. A footcandle is equal to one lumen per sf. To demonstrate compliance with IZO Section 21.040(D), a Lighting Analysis summarizing the anticipated horizontal illuminance of the project was prepared by Associated Lighting Representatives, Inc.[4] Horizontal illuminance describes the amount of light landing on a horizontal surface, such as the ground. Pursuant to the Lighting Analysis, the proposed garage alleys would result in an average horizontal illuminance of 0.8 footcandles and a maximum horizontal illuminance of 2.7 footcandles. The proposed private street would result in an average horizontal illuminance of 0.6 footcandles and a maximum horizontal illuminance of 1.8 footcandles. Based on the Lighting Analysis, the project would be consistent with the requirements set forth by IZO Section 21.040(D).

In addition, any streetlights included as part of the project would be designed to be consistent with the standards set forth in the City's Street Light Design and Construction Standards, which would ensure streetlights installed as part of the project do not exceed the maximum illuminance allowed by the City. Furthermore, interior and exterior lighting associated with the proposed dwelling units would be designed in accordance with the requirements set forth by the California Energy Code (Title 24, Part 6).[5] Finally, pursuant to IZO Section 24.050, the project would be subject to Site Plan and Architectural Review, which would ensure the project is consistent with the applicable development standards set forth by the IZO for the R4 zoning district and does not include new sources of light and glare at levels prohibited by the City.

Based on the above, through compliance with all applicable regulations, and standards set forth by the Petaluma IZO and the California Energy Code, the project would not introduce new sources of substantial light or glare to the project site that would adversely affect day or nighttime views in the area, and a ***less-than-significant*** impact would occur.

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4 Associated Lighting Representatives, Inc. *Lighting Analysis*. March 1, 2022.

5 California Energy Commission. *Lighting*. Available at: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/online-resource-center/lighting. Accessed June 2022.

II. AGRICULTURE AND FORESTRY RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	✖	☐
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	✖
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	✖
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	✖
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	✖	☐

Discussion

a,e. Pursuant to the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP), the project site is designated entirely as "Urban and Built-up Land."[6] The DOC defines Urban and Built-up Land as land that is used for "developed purposes," including, but not limited to, residential, industrial, commercial, and public administration development. Therefore, the project site does not include Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and development of the project would not result in the conversion of Farmland to non-agricultural use. It should be noted that the project site contains fruit trees and a garden associated with the 270 Casa Grande Road residence; however, the number of fruit trees on-site are relatively few in comparison to a commercial orchard and do not qualify the 270 Casa Grande Road residential property as Farmland.

Based on the above, the project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use or involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. Thus, a ***less-than-significant*** impact would occur.

b. The project site is currently zoned R4, which allows for single-family and multifamily residential development as part of the zoning district's permitted uses. In addition, the site is not under a Williamson Act contract. Therefore, buildout of the site with the project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and ***no impact*** would occur.

c,d. The project site is not considered forest land (as defined in PRC Section 12220[g]), timberland (as defined by PRC Section 4526), and is not timberland zoned Timberland

[6] California Department of Conservation. *California Important Farmland Finder*. Available at: https://maps.conservation.ca.gov/dlrp/ciff/. Accessed June 2022.

Production (as defined by Government Code Section 51104[g]). Therefore, the project would have ***no impact*** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	✖	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	✖	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	✖	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	✖	☐

Discussion

a,b. The City of Petaluma is located within the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The SFBAAB area is currently designated as a nonattainment area for State and federal ozone, State and federal fine particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State respirable particulate matter 10 microns in diameter (PM_{10}) ambient air quality standards (AAQS). The SFBAAB is designated attainment or unclassified for all other AAQS. It should be noted that on January 9, 2013, the U.S. Environmental Protection Agency (USEPA) issued a final rule to determine that the Bay Area has attained the 24-hour $PM_{2.5}$ federal AAQS. Nonetheless, the Bay Area must continue to be designated as nonattainment for the federal $PM_{2.5}$ AAQS until such time as the BAAQMD submits a redesignation request and a maintenance plan to the USEPA, and the USEPA approves the proposed redesignation. The USEPA has not yet approved a request for redesignation of the SFBAAB; therefore, the SFBAAB remains in nonattainment for 24-hour $PM_{2.5}$.

In compliance with regulations, due to the nonattainment designations of the area, the BAAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the AAQS, including control strategies to reduce air pollutant emissions through regulations, incentive programs, public education, and partnerships with other agencies. The current air quality plans are prepared in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG).

The most recent federal ozone plan is the 2001 Ozone Attainment Plan, which was adopted on October 24, 2001, and approved by the California Air Resources Board (CARB) on November 1, 2001. The plan was submitted to the USEPA on November 30, 2001, for review and approval. The most recent State ozone plan is the 2017 Clean Air Plan, adopted on April 19, 2017. The 2017 Clean Air Plan was developed as a multi-pollutant plan that provides an integrated control strategy to reduce ozone, PM, toxic air contaminants (TACs), and greenhouse gases (GHGs). Although a plan for achieving the State PM_{10} standard is not required, the BAAQMD has prioritized measures to reduce PM in developing the control strategy for the 2017 Clean Air Plan. The control strategy serves as the backbone of the BAAQMD's current PM control program.

The aforementioned air quality plans contain mobile source controls, stationary source controls, and transportation control measures to be implemented in the region to attain the State and federal AAQS within the SFBAAB. Adopted BAAQMD rules and regulations, as well as thresholds of significance, have been developed with the intent to ensure

continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with applicable air quality plans. The BAAQMD's established significance thresholds associated with development projects for emissions of the ozone precursors reactive organic gases (ROG) and oxides of nitrogen (NO_x), as well as for PM_{10} and $PM_{2.5}$, expressed in pounds per day (lbs/day) and tons per year (tons/yr), are listed in Table 4. By exceeding the BAAQMD's mass emission thresholds for ROG, NO_X, PM_{10}, or $PM_{2.5}$, a project would be considered to conflict with or obstruct implementation of the BAAQMD's air quality planning efforts.

Table 4
BAAQMD Thresholds of Significance

Pollutant	Construction	Operational	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10} (exhaust)	82	82	15
$PM_{2.5}$ (exhaust)	54	54	10

Source: BAAQMD, CEQA Guidelines, May 2017.

Emissions of particulate matter can be split into two categories: fugitive emissions and exhaust emissions. The BAAQMD thresholds of significance for exhaust PM emissions are presented in Table 4. The BAAQMD does not maintain quantitative thresholds for fugitive emissions of PM_{10} or $PM_{2.5}$; rather, BAAQMD requires all projects within the district's jurisdiction to implement Basic Construction Mitigation Measures (BCMMs) related to dust suppression.

The project's construction and operational emissions were quantified as part of a Construction Health Risk and Greenhouse Gas Assessment prepared for the project by Illingworth & Rodkin, Inc. (see Appendix A of this IS).[7] The project's emissions were modeled using the California Emissions Estimator Model (CalEEMod) software version 2020.4.0 for on-site construction activity, as well as operational air emissions associated with the project at full buildout. In addition, the CARB EMission FACtors 2021 (EMFAC2021) model was used to predict emissions from construction traffic, including worker travel, vendor trucks, and haul trucks, as well as to update the CalEEMod default vehicle emission factors and fleet mix during project operation.

CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including construction data, trip generation rates, vehicle mix, trip length, average speed, compliance with the California Building Standards Code (CBSC), etc. Where project-specific information is available, such information should be applied in the model. Accordingly, the project's modeling assumed the following project and/or site-specific information:

[7] Illingworth & Rodkin, Inc. *Creekwood Subdivision Construction Health Risk and Greenhouse Gas Assessment, Petaluma, California*. July 11, 2022.

- Construction would commence in January of 2023 and occur over an approximately 19-month period;
- Approximately 2,200 sf of building material would be removed during demolition;
- Approximately 86,500 sf of concrete would be required as part of building construction;
- Approximately 32,670 sf of asphalt would be required as part of paving for the project;
- Hearths/fireplaces would not be included in the proposed residences;
- Consistent with PMC Chapter 17.09, the proposed units would not include natural gas infrastructure; and
- The project would comply with all applicable provisions of the 2019 CBSC, including meeting 100 percent of electricity demand through on-site renewable energy generation.

Additionally, CalEEMod 2020.4.0 is based on the older CARB EMFAC2017 motor vehicle emission factor model, which has been superseded by EMFAC2021. Therefore, the construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. For more details on the construction traffic data used for EMFAC2021 model runs, see Table 3 of the Construction Health Risk and Greenhouse Gas Assessment. The project's estimated emissions associated with construction and operation are provided below. All CalEEMod and EMFAC2021 results are included in Appendix A to this IS.

Construction Emissions

According to the CalEEMod and EMFAC2021 results, the project would result in maximum unmitigated construction criteria air pollutant emissions as shown in Table 5.

Table 5
Unmitigated Maximum Construction Emissions

Year	ROG	NOx	PM_{10}*	$PM_{2.5}$*
Construction Emissions Per Year (Tons)				
2023	0.13	1.20	0.06	0.05
2024	0.66	0.35	0.02	0.01
Average Daily Construction Emissions Per Year (lbs/day)				
2023 (261 workdays)	0.98	9.19	0.43	0.38
2024 (139 workdays)	9.46	5.10	0.26	0.21
BAAQMD Threshold (lbs/day)	54	54	82	54
Exceeds Threshold?	**NO**	**NO**	**NO**	**NO**

* Denotes emissions from exhaust only. BAAQMD has not yet adopted PM thresholds for fugitive emissions.

Source: Illingworth & Rodkin, Inc., 2022.

As shown in the table, the construction of the project would generate criteria pollutant emissions below all applicable thresholds of significance. Nevertheless, all projects within the jurisdiction of the BAAQMD are required to implement all of the BAAQMD's BCMMs, which would be required by the City as conditions of approval:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure CCR Title 13, Section 2485). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

The project's required implementation of the BAAQMD's BCMMs listed above for the project's construction activities would help to minimize construction-related emissions. Overall, because construction of the project would not exceed any applicable thresholds of significance, project construction would result in a less-than-significant impact.

Operational Emissions

According to the CalEEMod and EMFAC2021 results, the project would result in maximum unmitigated operational criteria air pollutant emissions as shown in Table 6.

Table 6
Unmitigated Maximum Operational Emissions

	ROG	NOx	PM_{10}*	$PM_{2.5}$*
Year 2025 (tons/year)	0.83	0.35	0.40	0.11
BAAQMD Threshold (tons/year)	10	10	15	10
Exceeds Threshold?	**NO**	**NO**	**NO**	**NO**
Year 2025 (lbs/day)	4.55	1.92	2.19	0.58
BAAQMD Threshold (lbs/day)	54	54	82	54
Exceeds Threshold?	**NO**	**NO**	**NO**	**NO**

* Denotes emissions from exhaust only. BAAQMD has not yet adopted PM thresholds for fugitive emissions.

Source: Illingworth & Rodkin, Inc., 2022.

As shown in the table, the project's operational emissions would be below the applicable thresholds of significance. Because the project's operational emissions would be below the applicable thresholds of significance, the project would not be considered to conflict with air quality plans during project operation.

Cumulative Emissions

Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By nature, air pollution is largely a cumulative impact. A single project is not sufficient in size to, by itself, result in nonattainment of

AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The thresholds of significance presented in Table 4 represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. If a project exceeds the significance thresholds presented in Table 4, the project's emissions would be cumulatively considerable, resulting in a significant adverse cumulative air quality impact to the region's existing air quality conditions. Because the project would not generate criteria pollutant emissions above the applicable thresholds of significance, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State AAQS.

Conclusion

As stated previously, the applicable regional air quality plans include the 2001 Ozone Attainment Plan and the 2017 Clean Air Plan. Because construction and operation of the project would not result in emissions of criteria air pollutants in excess of BAAQMD's thresholds of significance, conflicts with or obstruction of the implementation of the applicable regional air quality plans would not occur. As a result, the project would not result in a cumulatively considerable net increase of a criteria pollutant for which the project region is nonattainment under an applicable federal or State AAQS. Thus, a ***less-than-significant*** impact would occur.

c. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest existing sensitive receptors to the project site are the Casa Grande Senior Apartments to the north; the single-family residences located to the east, across the Creek; the Casa Grande Subdivision to the south; and the Casa Grande High School to the west, across Casa Grande Road (see Figure 13).

The major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and TAC emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. High levels of localized CO concentrations are only expected where background levels are high, and traffic volumes and congestion levels are high. Emissions of CO are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood.

Figure 13
Existing Sensitive Receptors in Project Vicinity

In order to provide a conservative indication of whether a project would result in localized CO emissions that would exceed the applicable threshold of significance, the BAAQMD has established screening criteria for localized CO emissions. According to BAAQMD, a project would result in a less-than-significant impact related to localized CO emission concentrations if all of the following conditions are true for the project:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, underpass, etc.).

Considering the project would be consistent with the General Plan land use designation for the site, the project would not conflict with the Sonoma County Transportation Authority (SCTA) Comprehensive Management Program (CMP).[8] In addition, pursuant to Caltrans' Traffic Census Program, SR 116 at the SR116/SR 101 junction, approximately 1.2 miles southwest of the project site, experiences between 24,000 and 41,500 annual average daily traffic.[9] Considering SR 116 is a State Highway, the assumption can be reasonably made that the traffic traveling along SR 116 would be greater than the traffic traveling on the local roadways in the project vicinity. Therefore, given the relatively small size of the project, the addition of project-generated vehicle trips would not be expected to increase traffic volumes at any intersections within the project vicinity to more than 44,000 vehicles per hour. Furthermore, intersections where vertical and/or horizontal mixing is limited due to tunnels, underpasses, or similar features do not exist in the project area.

Furthermore, the General Plan EIR evaluated potential impacts related to CO emissions that could occur as part of development facilitated by buildout of the General Plan planning area and found that through implementation of General Plan Policy 4-P-7, which requires the enforcement of General Plan land use and transportation strategies that promote use of alternatives to automobile transportation, the potential impact would be reduced to a less-than-significant level. The project is consistent with the site's Medium Density Residential designation and R4 zoning and would generally comply with applicable policies set forth in the General Plan and regulations and standards set forth by the PMC. As such, analysis of the project was generally included as part of buildout of the General Plan, and the project would not result in impacts beyond those that were identified in the General Plan EIR.

Based on the BAAQMD's screening criteria for localized CO emissions, the project would not be expected to result in substantial levels of localized CO at surrounding intersections or generate localized concentrations of CO that would exceed standards or cause health hazards.

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8 Sonoma County Transportation Authority. *Moving Forward 2050: Sonoma County Comprehensive Transportation Plan.* September 2021.

9 California Department of Transportation. *2017 Traffic Volumes: Route 103-116*. Available at: https://dot.ca.gov/programs/traffic-operations/census/traffic-volumes/2017/route-103-116. Accessed August 2022.

TAC Emissions

Another category of environmental concern is TACs. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, distribution centers, gas-dispensing facilities, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk. As noted above, the nearest existing sensitive receptors to the project site are the Casa Grande Senior Apartments to the north; the single-family residences located to the east, across the Creek; and the Casa Grande High School to the west, across Casa Grande Road.

The project does not include any operations that would be considered a substantial source of TACs. Accordingly, operations of the project would not expose sensitive receptors to excess concentrations of TACs.

Short-term, construction-related activities would result in the generation of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. Construction would be temporary and occur over a relatively short duration in comparison to the operational lifetime of the project. Health risks are typically associated with exposure to high concentrations of TACs over extended periods of time (e.g., 30 years or greater), whereas the construction period associated with the project is estimated to be approximately 19 months. Nevertheless, considering the proximity of the nearest sensitive receptors in the project vicinity, several of which abut the project site, the Construction Health Risk and Greenhouse Gas Assessment includes a Community Health Risk Assessment to evaluate potential impacts that could occur to the maximally exposed individual (MEI) in the immediate project vicinity.[10]

Construction Emissions

The maximum modeled annual DPM and $PM_{2.5}$ concentrations, which include both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors to find the MEI (see Figure 13). Results of the assessment, which included consideration of future residents of the under-construction Casa Grande Subdivision to the south, indicated that the MEI to the proposed construction activities would be located at the adjacent Casa Grande Senior Apartments to the north of the project site. It should be noted that although the Casa Grande Subdivision would be located closer to the project site than the identified MEI, meteorological conditions (e.g., wind direction) result in the MEI being located at the adjacent Casa Grande Senior Apartments.

[10] Illingworth & Rodkin, Inc. *Creekwood Subdivision Construction Health Risk and Greenhouse Gas Assessment, Petaluma, California*. July 11, 2022.

Table 7 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project-related construction activities that could affect the MEI. Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum $PM_{2.5}$ concentrations associated with construction activities at the nearby Casa Grande High School.

Table 7
Construction Health Risks at the Off-Site MEI

Source	Cancer Risk (per million)	Annual PM2.5 ($\mu g/m^3$)	Hazard Index
MEI – Casa Grande Senior Apartments			
Project Construction	5.97	0.19	0.07
BAAQMD Single-Source Threshold	10	0.3	1.0
Exceeds Threshold?	**NO**	**NO**	**NO**
Casa Grande High School			
Project Construction	0.58	0.03	<0.01
BAAQMD Single-Source Threshold	10	0.3	1.0
Exceeds Threshold?	**NO**	**NO**	**NO**

Source: Illingworth & Rodkin, Inc., 2022.

The maximum increased cancer risks were adjusted using child exposure parameters. For more information on the method of analysis used to calculate TAC concentrations, please see the discussion under the Summary of Construction Community Risk Impacts heading in the Construction Health Risk and Greenhouse Gas Assessment. The annual $PM_{2.5}$ health risks are presented in micrograms per cubic meter of air ($\mu g/m^3$).

As shown in the table, the uncontrolled cancer risk, $PM_{2.5}$ concentration, and health index risks at the MEI and Casa Grande High School would not exceed the applicable BAAQMD single-source significance thresholds. In addition, as previously discussed, the project would be required to implement the BAAQMD BCMMs, which would further reduce potential risks associated with DPM and $PM_{2.5}$, particularly BCMM 6, which requires that construction equipment either be shut off when not in use or not exceed idling time of five minutes. Therefore, construction-related community health risks from DPM and $PM_{2.5}$ concentrations would be less than significant.

Cumulative Community Health Risks

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors located within 1,000 feet of a project site (i.e., the influence area). Such TAC sources include rail lines, highways, busy surface streets, and stationary sources identified by BAAQMD.

Pursuant to the Construction Health Risk and Greenhouse Gas Assessment, a review of the project area and provided traffic information indicate that roadways within the influence area do not have traffic exceeding 10,000 vehicles per day. In accordance with BAAQMD recommended risks and methodology, a road with less than 10,000 total vehicles per day is considered a low-impact source of TACs and does not need to be considered in a CEQA analysis. In addition, BAAQMD's stationary source geographic information systems (GIS) map tool did not identify stationary sources with the potential to affect the project site and MEI.

Based on the above, cumulative community health risks from DPM and $PM_{2.5}$ concentrations would be less than significant.

Criteria Pollutants

The BAAQMD thresholds of significance were established with consideration given to the health-based air quality standards established by the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS), and are designed to aid the district in achieving attainment of the NAAQS and CAAQS.[11] Although the BAAQMD's thresholds of significance are intended to aid achievement of the NAAQS and CAAQS for which the SFBAAB is in nonattainment, the thresholds of significance do not represent a level above which individual project-level emissions would directly result in public health impacts. Nevertheless, a project's compliance with BAAQMD's thresholds of significance provides an indication that criteria pollutants released as a result of project implementation would not inhibit attainment of the health-based regional NAAQS and CAAQS. Because project-related emissions would not exceed the BAAQMD's thresholds, and, thus, would not inhibit attainment of regional NAAQS and CAAQS, the criteria pollutants emitted during project implementation would not be anticipated to result in measurable health impacts to sensitive receptors. Accordingly, the project would not expose sensitive receptors to excess concentrations of criteria pollutants.

Conclusion

Based on the above discussion, the project would not expose any sensitive receptors to excess concentrations of localized CO, TACs, or criteria pollutants during construction or operation of the project. Consequently, the project would result in a ***less-than-significant*** impact related to the exposure of sensitive receptors to substantial pollutant concentrations.

d. Emissions of concern include those leading to odors, emission of dust, or emissions considered to constitute air pollutants. Air pollutants have been discussed in questions 'a' through 'c' above. Therefore, the following discussion focuses on emissions of odors and dust.

According to the BAAQMD CEQA Guidelines, odors are generally regarded as an annoyance rather than a health hazard.[12] Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The presence of an odor impact is dependent on a number of variables including: the nature of the odor source; the frequency of odor generation; the intensity of odor; the distance of odor source to sensitive receptors; wind direction; and sensitivity of the receptor. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative analysis to determine the presence of a significant odor impact is difficult. Typical odor-generating land uses include, but are not limited to, wastewater treatment plants, landfills, and composting facilities. The project would not introduce any such land uses and is not located in the vicinity of any such existing or planned land uses.

Construction activities often include diesel-fueled equipment and heavy-duty trucks, which could create odors associated with diesel fumes that may be considered objectionable.

[11] Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines*. May 2017.
[12] Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines*. May 2017.

However, construction activities would be temporary and pursuant to IZO Section 21.040, would be restricted to the hours of 7:00 AM to 10:00 PM, Monday through Friday, and 9:00 AM to 10:00 PM on Saturday, Sunday, and State, federal and local holidays. Project construction would also be required to comply with all applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources. The aforementioned regulations would help to minimize emissions, including emissions leading to odors. Accordingly, substantial objectionable odors would not be expected to occur during construction activities.

With respect to dust, as noted previously, the project would be required to implement BAAQMD's BCMMs during project construction. The BCMMs would act to reduce construction-related dust by requiring that haul trucks with loose material are covered, reducing vehicle dirt track-out, and limiting vehicle speeds within the project site, among other methods, which would ensure that construction of the project does not result in substantial emissions of dust. Following project construction, vehicles operating within the project site would be limited to paved areas of the site, and non-paved areas would be landscaped. Thus, project operations would not include sources of dust that could adversely affect a substantial number of people.

For the aforementioned reasons, construction and operation of the project would not result in emissions (such as those leading to odors) adversely affecting a substantial number of people, and a ***less-than-significant*** impact would result.

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

Discussion

a-e. Certain plant and wildlife species are considered to have special status if they are listed or proposed for listing under the federal or State Endangered Species Acts, meet the definition of rare or endangered under CEQA, or are considered rare locally. In addition, nesting birds and raptors are protected under the federal Migratory Bird Treaty Act of 1918 (MBTA), which prohibits killing, possessing, or trading of migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA covers take of whole birds, parts of birds, and bird nests and eggs. Various sections of the California Fish and Game Code (CFGC) also designate certain avian, mammal, reptile, and amphibian species as fully protected. With respect to plant species, the California Native Plant Society (CNPS) maintains a list of plant species native to the State that have low numbers, limited distribution, or are otherwise threatened with extinction. Potential impacts to populations of CNPS-listed plants receive consideration under CEQA.

The City of Petaluma is considered part of the northern subunit of the San Francisco Bay Area. Costal ranges in the region generally run from north to south and border the City on the east and west. The regional climate is heavily influenced by the proximity to the coastline. Annual rainfall averages 26.7 inches, and annual temperatures range from an average high of 82 degrees Fahrenheit in August to an average low of 57 degrees Fahrenheit in January. The project site consists primarily of agricultural fields planted with mixed grasses and forbs as forage crops for sheep grazing. In addition, the subject property includes two residences, a gravel driveway off Casa Grande Road that extends to the residence at 270 Casa Grande Road, associated outbuildings, and ornamental and garden vegetation. The Creek and its associated riparian corridor is located along the

eastern boundary of the project site. The Creek flows within the riparian corridor downstream, where it then confluences with the Petaluma River.

With regard to potential impacts to special-status species and sensitive natural communities, although the proposed dwelling units and new internal private street would be developed outside of a 50-foot setback from the top of the Creek bank, the off-site public multi-use pathway would be installed immediately adjacent to the Creek's riparian corridor. In addition, the off-site bridge connection would be installed over the Creek and require approximately 90 CY of net fill for the abutment fill slopes. Pursuant to the City's General Plan EIR, development immediately adjacent to the Creek could result in adverse impacts to various special-status fish species if construction activities were to occur within or adjacent to the stream channel. The Creek's riparian vegetation could also provide habitat to accommodate special-status invertebrates, amphibians, reptiles, mammals, and plants. Furthermore, the General Plan EIR found that the large trees throughout the City could serve as nesting habitat for raptors, and disturbances from construction activities in proximity to trees could cause nest abandonment and death of young or loss of reproductive potential at active nests. Considering the proximity of the project site to the Creek and its riparian corridor, the project could potentially disturb nesting raptors if such species are present within the trees adjacent to the Creek.

With respect to potential impacts to riparian habitat and/or federally or State-protected wetlands, as discussed, the Creek and its associated riparian corridor is located along the eastern boundary. The project would include development of the off-site public multi-use pathway immediately adjacent to the Creek's riparian corridor, installation of the off-site bridge connection over the Creek, approximately 90 CY of net fill for the abutment fill slopes along the banks of the Creek, and installation of two new stormwater outfalls into the Creek. Impacts to riparian woodlands are regulated under CFGC Section 1600, et seq. Specifically, CFGC Section 1602 requires notification to CDFW before a project commences "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW then reviews the proposed action(s). If CDFW determines that the proposed activity would substantially affect fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) containing measures to protect affected fish and wildlife resources would be required. In addition, the U.S. Army Corps of Engineers (USACE) regulates discharge of dredged or fill material below the ordinary high water mark (OHWM) of waters of the U.S. under Section 404 of the Clean Water Act (CWA), and any action that requires a CWA Section 404 permit must also obtain a CWA Section 401 Water Quality Certification (WQC). Additional analysis is required to determine if the proposed outfalls would be installed below the OHWM, thus resulting in discharge of fill into waters regulated by the USACE and the need for a Section 404 permit from the USACE. Based on the above, the project could have a substantial adverse effect on riparian habitat or other sensitive natural communities or on federally or State-protected wetlands, and a significant impact could occur.

Finally, with respect to potential impacts related to migratory wildlife corridors or native wildlife nursery sites or conflicts with local policies or ordinance protecting biological resources, the Creek and its associated riparian corridor could potentially serve as a migratory corridor and nursery site for special-status fish species. Potential impacts associated with development of the off-site public multi-use pathway and bridge connection could, therefore, result in substantial interference with wildlife movements. In addition, pursuant to IZO Section 17.060, removal of trees that qualify as protected trees

require a Tree Permit and replacement of the removed trees on the development site or in reasonable proximity to the site. Therefore, without compliance with the provisions of IZO Section 17.060, the project could result in a significant impact.

Based on the above, the project could have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS; riparian habitats or other sensitive natural communities; state- or federally protected wetlands; and/or movement corridors or native wildlife nursery sites; or conflict with a local policy or ordinance protecting biological resources. Therefore, a ***potentially significant*** impact could occur.

Further analysis of the above potential impacts will be included in the Biological Resources chapter of the 270 and 280 Casa Grande Road Creekwood Housing Development Project EIR.

f. A Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) has not been adopted in which the City of Petaluma is a participant. Therefore, the project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or State habitat conservation plan, and ***no impact*** would occur.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	✖	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	✖	☐	☐
c. Disturb any human remains, including those interred outside of dedicated cemeteries.	☐	☐	✖	☐

Discussion

a. Historical resources are features that are associated with the lives of historically important persons and/or historically significant events, that embody the distinctive characteristics of a type, period, region or method of construction, or that have yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation. Examples of typical historical resources include, but are not limited to, buildings, farmsteads, rail lines, bridges, and trash scatters containing objects such as colored glass and ceramics.

A Cultural Resources Study (CRS) was prepared for the project by Montrose Environmental Solutions to determine to what extent historical and archaeological resources could be impacted by the project.[13] The CRS included a record search of the California Historical Resources Information System (CHRIS) at the Northwest Information Center at Sonoma State University to determine whether cultural resources have been recorded within or adjacent to the project site, to determine if the site has been surveyed in the past, and to assess the likelihood of unrecorded cultural resources within the project site based on archaeological, ethnographic, and historical documents and literature. The CHRIS records search encompassed the project site and a 0.5-mile buffer zone and included a review of the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), historical marker listings, Sacramento County resource listings, and historic maps. According to the records search, none of the 27 California Historic Landmarks in Sonoma County are located in or adjacent to the project site. Similarly, while the City of Petaluma includes eight sites listed on the NRHP, none are located in the immediate project vicinity. Additionally, according to the CRS, a total of 10 archaeological surveys have been completed within 0.5-mile of the project site. None of the surveys identified cultural resources within the project site. While three resources were identified within 0.5-mile of the site (i.e., the Martinelli Ranch Complex, a PG&E substation, and the Frates Ranch), the proposed construction activities would be limited to the boundaries of the project site and the areas immediately to the east along the Creek. Therefore, the project would not impact any of the foregoing known historic resources.

In addition to the CHRIS records search, the CRS included a field survey of the existing on-site residences located to the west of the Creek and the accessible portions of the Creek. According to the CRS, the project site is primarily comprised of the two residences and associated structures at 270 and 280 Casa Grande Road, as well as sheep pasture that consisted of dense spring grasses and forbs at the time of the site reconnaissance. The CRS noted that both residences are in good condition. A second field survey was

[13] Montrose Environmental Solutions. *Cultural Resources Study: Falcon Point Associates, LLC, Creekwood Housing Development Project*. April 2022.

completed of the off-site area located between the Creek and Spyglass Road. Potential cultural resources were not identified as part of the second survey.

Pursuant to records maintained at the Sonoma County Assessor's Office, the residence at 280 Casa Grande Road was built in 1951 and the residence at 270 Casa Grande Road was built in the mid-1960s. Generally, properties eligible for listing in the NRHP are at least 50 years old. In addition, cultural resources determined eligible for the NRHP by a federal agency are automatically eligible for the CRHR. Thus, the on-site structures could be eligible for listing in the NRHP and CRHR. As the residence at 270 Casa Grande Road would be maintained on-site as part of the 0.637-acre Remainder, potential impacts to the residence would not occur. With respect to the residence at 280 Casa Grande Road, four criteria are used to determine if a potential resource may be considered significant and eligible for listing on the NRHP. The criteria include resources that:

1. NRHP Criterion A/CRHR Criterion 1: Are associated with events that have made a significant contribution to the broad patterns of history; or
2. NRHP Criterion B/CRHR Criterion 2: Are associated with the lives of persons significant in our past; or
3. NRHP Criterion C/CRHR Criterion 3: Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
4. NRHP Criterion D/CRHR Criterion 4: Have yielded or may likely yield information important in prehistory or history.

According to the CRS, the 270 Casa Grande Road structure does not appear to be associated with significant historical events or individuals, and thus, does not meet NRHP Criterion A/CRHR Criterion 1 or NRHP Criterion B/CRHR Criterion 2. The structure is a basic design that does not present artistic or distinctive architectural values, and therefore, does not meet NRHP Criterion C/CRHR Criterion 3. Finally, neither the construction, location, nor physical characteristics of the structure offers any data that could be important to the interpretation of history in the region. As such, the structure does not qualify for listing under NRHP Criterion D/CRHR Criterion 4 and would not be eligible for listing in the NRHP and CRHR.

It should be noted that the City of Petaluma has designated two historic districts: the Petaluma Historic Commercial District, which encompasses much of Downtown Petaluma and includes contributing buildings, and the Oakhill-Brewster Historic District, a locally designated architectural preservation district located north and west of Downtown Petaluma. The project site is not located in either district.

Based on the above, because known cultural resources do not exist on-site (including the on-site residences), the project would not cause a substantial adverse change in the significance of a historical resource, and a ***less-than-significant*** impact would occur.

b. According to the CRS, 10 archaeological surveys have been previously completed within 0.5-mile of the project site; although, none included the site. Additionally, as discussed above, the CRS included a pair of field surveys that encompassed the on-site residential areas west of the Creek, the accessible portions of the Creek, and the off-site area located between the Creek and Spyglass Road. Neither of the surveys yielded evidence indicating the presence of archaeological resources.

While known resources do not exist within the project site, the CRS noted that the project site is within the Coastal Miwok ethnographic territory. Archeological evidence indicates that the Miwok people chose to inhabit areas near small bays, lagoons, and streams. In addition, the project region had an abundance of food to serve the Miwok people, and the Miwok's daily activities included large game and bird hunting, fishing, and acorn gathering and processing. As such, the project vicinity potentially contains unknown Native American resources associated with the Coastal Miwok, including human remains, particularly in areas within historic waterways. Considering the project site's proximity to the Creek, the project could potentially disturb unknown archaeological resources, should they be located within the project footprint, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

V-1 *If during the course of ground-disturbing activities, including, but not limited to, excavation, grading, and construction, a potentially significant prehistoric or historic resource is encountered, all work within a 100-foot radius of the find shall be suspended for a time deemed sufficient for a qualified and City-approved archaeologist to adequately evaluate and determine significance of the discovered resource and provide treatment recommendations.*

Should a significant archeological resource be identified, a qualified archaeologist shall prepare a resource mitigation plan and monitoring program to be carried out during all construction activities. Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

c. Although the project site does not include evidence suggesting that human remains have been interred within the site boundaries, in the event that human remains are encountered during ground-disturbing activities, the project would comply with all requirements set forth by California Health and Safety Code Section 7050.5, including the immediate cessation of ground-disturbing activities near or in any area potentially overlying adjacent human remains and contacting the Sonoma County Coroner upon the discovery of any human remains. If the County Coroner determines that the discovered remains are of Native American descent, the Native American Heritage Commission (NAHC) would be contacted immediately. If required, the project sponsor would retain a City-qualified archeologist to provide adequate inspection, recommendations, and retrieval. Compliance with California Health and Safety Code Section 7050.5 and performance of actions therein would ensure that in the event of accidental discovery of historically significant human remains, all potential impacts would remain less than significant.

Based on the above, through compliance with the requirements set forth by California Health and Safety Code Section 7050.5, the project would not disturb human remains, including those interred outside of dedicated cemeteries and a ***less-than-significant*** impact would occur.

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

Discussion

a,b. The main forms of available energy supply are electricity and oil. A description of the California Green Building Standards Code and the Building Energy Efficiency Standards, with which the project would be required to comply, as well as discussions regarding the project's potential effects related to energy demand during construction and operations, are provided below.

California Green Building Standards Code

The California Green Building Standards Code, otherwise known as the CALGreen Code (CCR Title 24, Part 11), is a portion of the CBSC. The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the CALGreen Code include, but are not limited to, the following measures:

- Compliance with relevant regulations related to future installation of Electric Vehicle (EV) charging infrastructure in residential and non-residential structures;
- Indoor water use consumption is reduced through the establishment of maximum fixture water use rates;
- Outdoor landscaping must comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills;
- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board; and
- For single-family and some low-rise residential development developed after January 1, 2020, mandatory on-site solar energy systems capable of producing 100 percent of the electricity demand created by the residence(s).

Building Energy Efficiency Standards

The 2019 Building Energy Efficiency Standards is a portion of the CBSC, which expands upon energy efficiency measures from the 2016 Building Energy Efficiency Standards. For residential buildings, compliance with the 2019 standards will result in approximately seven percent less energy use, relative to homes built in compliance with the 2016 standards.[14] Once rooftop solar electricity generation is factored in, homes built under the

[14] California Energy Commission. *Title 24 2019 Building Energy Efficiency Standards FAQ*. November 2018.

2019 standards use approximately 53 percent less energy than those constructed under the 2016 standards. It should be noted that the 2022 standards will go into effect January 1, 2023.

Construction Energy Use

Construction of the project would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the site where energy supply cannot be met through a hookup to the existing electricity grid. Project construction would not involve the use of natural gas appliances or equipment.

All construction equipment and operation thereof would be regulated by the CARB In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. The In-Use Off-Road Diesel Vehicle Regulation would subsequently help to improve fuel efficiency and reduce GHG emissions. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to reduce demand on oil and emissions associated with construction.

The CARB has prepared the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan),[15] which builds upon previous efforts to reduce GHG emissions and is designed to continue to shift the California economy away from dependence on fossil fuels. Appendix B of the 2017 Scoping Plan includes examples of local actions (municipal code changes, zoning changes, policy directions, and mitigation measures) that would support the State's climate goals. The examples provided include, but are not limited to, enforcing idling time restrictions for construction vehicles, utilizing existing grid power for electric energy rather than operating temporary gasoline/diesel-powered generators, and increasing use of electric and renewable fuel-powered construction equipment. The In-Use Off-Road Diesel Vehicle Regulation described above, with which the project must comply, would be consistent with the intention of the 2017 Scoping Plan and the recommended actions included in Appendix B of the 2017 Scoping Plan.

Based on the above, the temporary increase in energy use occurring during construction of the project would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, the project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

Operational Energy Use

Following construction of the project, supplemental electricity would be provided to the project site by PG&E and Sonoma Clean Power, a community choice program provider that sells electricity generated from renewable energy sources that is then delivered

[15] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.

through PG&E's grid. In accordance with the 2019 Building Energy Efficiency Standards, the project would be required to include on-site renewable energy systems capable of producing 100 percent of the electricity demanded by the residences. Energy use associated with operation of the project would be typical of residential uses, requiring electricity for interior and exterior building lighting; heating, ventilation, and air conditioning (HVAC); electronic equipment; machinery; appliances; security systems; and more. Maintenance activities during operations, such as landscape maintenance, would involve the use of electric- or gas-powered equipment. In addition to on-site energy use, the project would result in transportation energy use associated with vehicle trips generated by resident commutes.

The project would be subject to all relevant provisions of the most recent update of the CBSC, including the Building Energy Efficiency Standards. Adherence to the most recent CALGreen Code and the Building Energy Efficiency Standards would ensure that the proposed structures would consume energy efficiently. As previously noted, each of the dwelling units would be required to include photovoltaic (PV) generation sized to meet all of the homes' expected electricity needs. Required compliance with the CBSC would ensure that the building energy use associated with the project would not be wasteful, inefficient, or unnecessary. In addition, electricity supplied to the project by PG&E would comply with the State's Renewables Portfolio Standard, which requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 and to 60 percent by 2030. Thus, in addition to the solar energy generated by the on-site PV systems, a portion of the supplemental energy provided by PG&E to the project site would also originate from renewable sources.

Through adoption of Ordinance No. 2708 N.C.S. in 2020, the Petaluma City Council adopted the Tier 2 CALGreen Standards to meet higher levels of building energy efficiency. The Tier 2 standards generally achieve energy efficiency approximately 30 percent beyond those necessitated by Title 24, as well as a construction waste reduction rate of 45 percent. CALGreen Tier 2 standards reduce energy consumption by HVAC systems and require use of low-water irrigation systems, water-efficient appliances and faucets, cool roofs, short- and long-term bicycle parking, EV charging spaces, outdoor energy performance lighting, and other mandatory energy efficiency measures. Prior to issuance of a building permit, the proposed residences and associated site improvements would be required to demonstrate compliance with the CALGreen Tier 2 standards.

Finally, consistent with PMC Chapter 17.09, the proposed units would not include natural gas infrastructure. The General Plan EIR evaluated the potential for development facilitated by buildout of the General Plan planning area to result in wasteful, inefficient, or unnecessary consumption of energy and found that through incorporation of General Plan Policy 4-P-18, which requires local adoption of energy standards resulting in less energy consumption than those set forth by Title 24, a less-than-significant impact would occur. As discussed, the project is consistent with the site's Medium Density Residential designation and R4 zoning and would be subject to applicable policies set forth by the General Plan and regulations and standards set forth at the State and local level. Therefore, buildout of the project site with the proposed uses was generally considered as part of buildout of the General Plan, and the project would not result in impacts beyond those that were identified in the General Plan EIR.

With regard to transportation energy use, the project would comply with all applicable regulations associated with vehicle efficiency and fuel economy, including mandatory EV-capable parking spaces required by CALGreen. For single-family residences, townhomes, and duplexes, CALGreen requires all new dwelling units to have electrical panel capacity, a dedicated branch circuit, and a listed raceway to accommodate a dedicated 208/40-volt branch circuit to support future installation of charging stations.

Conclusion

Based on the above, construction and operation of the project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Thus, a ***less-than-significant*** impact would occur.

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

Discussion

The following discussions are based on the Geotechnical Investigation and the Addendum to the Geotechnical Report (Geotechnical Addendum) prepared for the project by PJC & Associates, Inc. (see Appendix B of this IS).[16,17]

ai,aii. The project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone and known surface expressions of active faults do not exist within the property. While the project site does lie within a seismically active region and numerous faults in the area are considered active, the project site is not within a currently established California Earthquake Hazard Zone for surface fault rupture hazards.[18] In addition, pursuant to the Geotechnical Investigation, the project site does not include active faults with the potential for surface fault rupture directly beneath the site. The three closest known active faults to the site are the Rodgers Creek, the West Napa, and the San Andreas faults, which are 2.27 miles to the northeast, 15.55 miles to the east, and 16.73 miles southwest from the

[16] PJC & Associates, Inc. *Geotechnical Investigation: Proposed Residential Development, 270 & 280 Casa Grande Road, Petaluma, California, APN: 017-040-008 & 015*. September 21, 2020.

[17] PJC & Associates, Inc. *Addendum to Geotechnical Report: Proposed Residential Subdivision, 270 & 280 Casa Grande Road, Petaluma, California, APN: 017-040-008 & 015*. January 6, 2022.

[18] California Department of Conservation. *Earthquake Zones of Required Investigation*. Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed August 2022.

site, respectively. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development is considered low.

Additionally, the proposed buildings would be properly engineered in accordance with the CBSC, which includes engineering standards appropriate for Site Design Category D structures, such as the proposed dwelling units. Proper engineering of the project would ensure that seismic-related effects would not cause adverse impacts. Based on the above information, the project would not directly or indirectly cause substantial adverse effects involving rupture of a known earthquake fault or strong seismic ground shaking, and a ***less-than-significant*** impact would occur.

aiii,aiv, c. The project's potential effects related to liquefaction, landslides, lateral spreading, and subsidence are discussed in detail below.

Liquefaction and Subsidence

Soil liquefaction is a state of soil particles suspension caused by a complete loss of strength when the effective stress drops to zero. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. Liquefaction normally occurs under saturated conditions in soils such as sand in which the strength is purely frictional. Primary factors that trigger liquefaction are: moderate to strong ground shaking (seismic source), relatively clean, loose granular soils (primarily poorly graded sands and silty sands), and saturated soil conditions (shallow groundwater). Due to the increasing overburden pressure with depth, liquefaction of granular soils is generally limited to the upper 50 feet of a soil profile. However, liquefaction has occurred in soils other than clean sand.

Pursuant to the Geotechnical Investigation, the project site is not located in an area designated by the California Geologic Survey (CGS) as a Liquefaction Zone; however, according to the Association of Bay Area Governments Resilience Program's online Liquefaction Susceptibility Map, the project site is considered to have moderate susceptibility to liquefaction during or immediately following a significant seismic event. The Geotechnical Investigation included the drilling of eight exploratory boreholes (BH-1 through BH-8) to maximum depths of 50.5 feet below the existing ground surface (bgs). In order to confirm the potential for liquefaction at the site, soils encountered in BH-1, which was drilled to a depth of 50 feet bgs, were evaluated for liquefaction potential of the strata. Based on the results, the Geotechnical Investigation concluded the strata at the project site are not prone to liquefaction, as the on-site granular soils are of relatively high densities and on-site clay soils are of high plasticity. It should be noted that the Geotechnical Investigation evaluated potential impacts associated with development of the project site with 35 residential lots; however, pursuant to the Geotechnical Addendum, the conclusions of the Geotechnical Investigation would still be applicable to the currently proposed project. Therefore, the potential for liquefaction to pose a risk to the project is considered low.

Subsidence is the settlement of soils of very low density generally from either oxidation of organic material, or desiccation and shrinkage, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. Given that the project would comply with the CBSC, the potential for subsidence to pose a risk to the project is considered low.

Landslides and Lateral Spreading

Seismically-induced landslides are triggered by earthquake ground shaking. The risk of landslide hazard is greatest in areas with steep, unstable slopes. The project site is flat and located near an elevation of 48 feet above mean sea level. Thus, the project would not be subject to potential landslide hazards.

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. According to the Geotechnical Investigation, the project site does not contain overly steep, exposed faces or banks in close proximity to the site. Therefore, the potential for lateral spreading to pose a risk to the project is considered low.

Conclusion

Based on the above, the distance of the project site from the nearest active fault, the relatively flat topography of the project site, acceptable subsurface conditions, and compliance with the CBSC would ensure that the project would not be susceptible to on-site liquefaction, landslides, lateral spreading, or subsidence. Therefore, the project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction or landslides, and would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. Thus, a ***less-than-significant*** impact would occur.

b. Erosion refers to the removal of soil from exposed bedrock surfaces by wind or water. Although naturally occurring, erosion is often accelerated by human activities that disturb soil and vegetation. The topography of the project site is relatively level, and upon development of the site with buildings and structures, the amount of exposed soil that may be lost due to wind or stormwater runoff would be minimized. However, development of the site, primarily during the early stages of construction activities, would cause ground disturbance of mostly topsoil, potentially resulting in wind erosion or an accelerated rate of erosion during storm events.

The project would include grading and development of the project site with 62 dwelling units, various on-site road and utility improvements, landscaping, and a new off-site public multi-use pathway, with a bridge connection over the Creek. The ground disturbance would be limited to the areas proposed for grading and excavation, including building pads; curb, gutter, and sidewalk improvement areas; drainage, sewer, and water infrastructure alignments; and improvement areas along the banks of the Creek. After grading and excavation and prior to overlaying the disturbed ground surfaces with impervious surfaces and structures, the potential exists for wind and water erosion to occur, which could adversely affect downstream storm drainage facilities. New development within the City that disturbs one or more acres of land is required to comply with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. The project would disturb approximately 4.56 acres, and therefore, would be subject to the NPDES requirements. As part of compliance with the Construction General Permit, the project would be required to prepare a Storm Water Pollution Prevention Plan (SWPPP), incorporating Best Management Practices (BMPs) or equivalent measures designed to control surface runoff and erosion, retain sediment on-site, and prevent pollution of site runoff during the period in which preconstruction- and construction-related

grading and/or soil storage occur, and before final improvements or permanent structures are completed. BMPs to prevent erosion-related impacts include, but are not limited to, minimizing the disturbed area to the maximum extent feasible; diversion ditches or berms to direct on-site stormwater runoff to a sediment-trapping structure; stabilization of exposed soils in areas where construction activities have ceased, including through temporary seeding, blankets and mats, and/or the use of soil blinders; and storm drain inlet protection through the use of inlet filters, such as silt fencing and/or rock-filled bags.

In addition, as necessitated by PMC Section 17.31.190, the project would be required to prepare a final erosion and sediment control plan that effectively minimizes soil erosion and sedimentation from the completed project and must also provide for the control of runoff from the project site. The final erosion and sediment control plan would be required to be prepared by a registered civil engineer and submitted to the City prior to approval of a building permit.

Based on the above, through compliance with the NPDES Construction General Permit and PMC Section 17.31.190, the project would not result in substantial soil erosion or loss of topsoil, and a ***less-than-significant*** impact would occur.

d. Expansive soils change in volume with changes in moisture and can shrink or swell, causing heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. As part of the Geotechnical Investigation, Atterberg Limits testing and Expansion Index testing were conducted for the on-site soils to assess the plasticity characteristics of the on-site soils. The Geotechnical Investigation found that the top two to three feet of surface soils are weak and compressible. Weak and compressible soils appear hard and strong when dry, but can lose strength rapidly and collapse from the loads of fills, foundations, or slabs-on-grade as their moisture increases and approaches saturation. Thus, due to the test results, as well as the conclusions of visual observations, the Geotechnical Investigation determined that the on-site soils exhibit high plasticity characteristics and, therefore, have very high potential for expansion. As previously discussed, the foregoing conclusion was affirmed for the project by the Geotechnical Addendum.

The project would be required to comply with all applicable CBSC standards to ensure the structural integrity of the proposed structures. The Geotechnical Investigation includes recommendations to address potential impacts related to expansive soils and settlements, including measures pertaining to foundations, pavements, existing fill removal, fill compaction, acceptable engineered fill, and review of the final improvement plans to ensure the recommendations contained in the Geotechnical Investigation have been properly incorporated into the project design.

Based on the above, without compliance with the recommendations contained in the Geotechnical Investigation, expansive soils could impact the project, creating substantial direct or indirect risks to life or property. Therefore, the project could result in a ***potentially significant*** impact.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

VII-1 *Prior to the issuance of grading permits, the project civil engineer shall show on the final improvement plans that the project design adheres to all engineering recommendations provided in the site-specific Geotechnical Investigation prepared for the project by PJC & Associates, Inc. The recommendations incorporated into the final improvement plans shall include, but not be limited to, those pertaining to the top 18 inches of soil beneath exterior flatwork consisting of imported engineered fill; demolition and stripping; excavation and compaction; temporary slopes; and vertical loads and lateral loads of post-tension slab-on-grade foundations. Proof of compliance with all recommendations set forth in the Geotechnical Investigation shall be subject to review and approval by the City Engineer.*

e. Sewer collection for the project would be provided by connection to the City's sewer system. The construction or operation of septic tanks or other alternative wastewater disposal systems is not included as part of the project. Therefore, ***no impact*** regarding the capability of soil to adequately support the use of septic tanks or alternative wastewater disposal systems would occur.

f. Paleontological resources are the fossil remains or traces of past life forms, including both vertebrate and invertebrate species, as well as plants. The General Plan EIR evaluated the potential for development facilitated by buildout of the General Plan planning area to result in impacts to unique paleontological resources or sites. As noted therein, while areas of potential paleontological significance are present throughout the rural and built-up areas of the City, known paleontological sites have not been identified within the General Plan planning area.

The project site has already experienced ground disturbance as part of the construction activities associated with the site's existing residences and associated structures. In addition, the project would not include construction activities extending to depths at which unique paleontological resources are typically encountered. As such, the project would have only limited potential for encountering paleontological resources within the project site. Additionally, PRC Sections 5097 to 5097.6, with which the project would be required to comply, prohibit the unauthorized disturbance or removal of paleontological resources. Furthermore, the General Plan EIR evaluated the potential for development facilitated by buildout of the planning area to result in potential impacts to unique paleontological resources and concluded that with compliance with applicable General Plan policies, the potential impact would be reduced to a less-than-significant level. The project is consistent with the site's Medium Density Residential designation and would comply with applicable policies set forth in the General Plan. Therefore, the project would not result in impacts beyond what were identified in the General Plan EIR.

Based on the above, due to the previous disturbance to which the project site has already experienced and the project's required compliance with PRC Sections 5097 to 5097.6, the project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, and a ***less-than-significant*** impact would occur.

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

Discussion

a,b. GHG emissions contribute to global climate change and are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, cumulative global GHG emissions that contribute to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to GHG emissions are inherently considered cumulative impacts.

A number of regulations currently exist related to GHG emissions, predominantly AB 32, Executive Order S-3-05, and Senate Bill (SB) 32. AB 32 sets forth a statewide GHG emissions reduction target of 1990 levels by 2020. Executive Order S-3-05 sets forth a transitional reduction target of 2000 levels by 2010, the same target as AB 32 of 1990 levels by 2020, and further builds upon the AB 32 target by requiring a reduction to 80 percent below 1990 levels by 2050. SB 32 also builds upon AB 32 and sets forth a transitional reduction target of 40 percent below 1990 levels by 2030. In order to implement the statewide GHG emissions reduction targets, local jurisdictions are encouraged to prepare and adopt area-specific GHG reduction plans and/or thresholds of significance for GHG emissions. Accordingly, the City of Petaluma adopted a Climate Emergency Framework (CEF) on January 11, 2021. The purpose of the CEF is to outline principles to guide the City's ongoing response to and discussion about the climate crisis and to guide and inform subsequent policies and implementation strategies. The CEF consists of the following four sections:

1. Equity and Climate Justice: The section explains the ethical implications of climate change that must be solved while simultaneously addressing the crisis of inequity in the community that threatens successful and collective climate action.
2. Mitigation and Sequestration: The section discusses the major sources of GHG emissions in the City of Petaluma, what can be done to reduce and eliminate GHG emissions generated in the City, and how the City can remove carbon from the atmosphere.
3. Adaptation and Social Resilience: The section explains how the City can prepare for climate change impacts and develop the means to withstand the impacts that cannot be avoided.
4. Community Engagement: The section discusses the necessity of community engagement in order to address the climate crisis to allow the City to collectively set and meet climate action targets and to strengthen the community in the process.

As detailed in the Mitigation and Sequestration section of the CEF, the City's goal is to develop a Climate Change Adaptation and Resilience Plan that would:

- Assess anticipated climate impacts and inform City decisions and investments in infrastructure and land use planning to improve those impacts;
- Prioritize known climate change risks with the greatest anticipated impact on Petaluma residents, environment, and economy into yearly budgets for adaptation and resiliency implementation;
- Address adaptation and resilience with whole-system thinking for long-term ecosystem vitality as the basis for community and environmental wellbeing and economic vitality;
- Support the Petaluma environment by such measures as open space and green space preservation, high-use/low-impact project designs, a healthy urban forest, wildlife corridor preservation and protected habitat areas, and nature-based stormwater management system that contributes to local ecosystem health and protects and enhances existing native habitat areas and natural systems;
- Develop resilient infrastructure and community readiness, including backup sources of water, power, and communications;
- Restore and enhance local ecosystem health and improve resilience to climate change; and
- Facilitate development that minimizes and anticipates impacts from climate change and respects the ecological health of the Petaluma River, wetlands, wet meadow, grasslands, greenbelt, and open space ecosystems.

Estimated GHG emissions attributable to the project would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O). Buildout of the project would contribute to increases of GHG emissions that are associated with global climate change during construction of the proposed residences, site improvements, and off-site improvements. In addition, during project operations, new vehicle trips associated with the future residents of the project would contribute to increases of GHG emissions associated with global climate change. As such, the project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. Therefore, impacts related to GHG emissions and global climate change could be cumulatively considerable and considered ***potentially significant***.

Further analysis of the above potential impact will be included in the Greenhouse Gas Emissions chapter of the 270 and 280 Casa Grande Road Creekwood Housing Development Project EIR.

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

Discussion

a. A significant hazard to the public or the environment could result from the routine transport, use, or disposal of hazardous materials. Projects that involve the routine transport, use, or disposal of hazardous materials are typically industrial in nature. The project would not be industrial in nature. Operations of the proposed 62-unit residential project would not include any activities that would involve the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. During operations, hazardous material use would be limited to landscaping products such as fertilizer, pesticides, as well as typical commercial and maintenance products (cleaning agents, degreasers, paints, batteries, and motor oil). Proper handling and usage of such materials in accordance with label instructions would ensure that adverse impacts to human health or the environment would not result. Thus, operations of the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

During project construction, the project contractor would be required to comply with all California Health and Safety Codes and local County ordinances regulating the handling, storage, and transportation of hazardous and toxic materials. Pursuant to California Health and Safety Code Section 25510(a), except as provided in subdivision (b),[19] the handler or an employee, authorized representative, agent, or designee of a handler, must, upon discovery, immediately report any release or threatened release of a hazardous material

[19] Subdivision (a) does not apply to a person engaged in the transportation of a hazardous material on a highway that is subject to, and in compliance with, the requirements of Sections 2453 and 23112.5 of the Vehicle Code.

to the unified program agency (in the case of the project, Sonoma County Environmental Health and Safety Division [SCEHSD]) in accordance with the regulations adopted pursuant to Section 25510(a). The handler or an employee, authorized representative, agent, or designee of the handler must provide all State, city, or county fire or public health or safety personnel and emergency response personnel with access to the handler's facilities. In the case of the project, the contractors would be required to notify the SCEHSD in the event of an accidental release of a hazardous material, who would then monitor the conditions and recommend appropriate remediation measures.

Based on the above, because the project is not industrial and would be required to comply with all California Health and Safety Codes and local County ordinances, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and a ***less-than-significant*** impact would occur.

b. A Phase I Environmental Site Assessment (ESA) was prepared for the project by Montrose Environmental Solutions (see Appendix C of this IS) for the purposes of identifying, to the extent possible, whether former activities at or near the project site may have involved or resulted in the use, storage, disposal, and/or release of hazardous or potentially hazardous substances to the environment.[20] The Phase I ESA was prepared in conformance with the general scope and limitations of the American Society for Testing and Materials (ASTM) Practice E1527-21 standard. Past and current uses of the project site and surrounding properties were evaluated by reviewing available historical aerial photographs and topographic maps; federal, State, and local databases of known storage tank sites and known sites of hazardous materials generation, storage, and/or release; and site conditions through a site reconnaissance.

According to the Phase I ESA, historical aerial images indicate that the project site was predominantly undeveloped, aside from the existing residence at 280 Casa Grande Road, until 1968, when the driveway and eastern residence at 270 Casa Grande Road was built. Between 1970 and 1973, an associated barn structure was constructed. Development in the project vicinity likely occurred around 1973, as the Casa Grande High School and some residential development appear in a 1973 aerial image. By 1982, additional dense residential development is visible north and south of the project site. By 2006, the subject property and immediate adjoining properties to the north and south are surrounded by residential development. In 2009, the adjacent property immediately to the north is developed with the Casa Grande Senior Apartments. By this time, industrial or commercial land uses do not appear in the project vicinity, except for the site of the now under-construction Casa Grande Subdivision immediately to the south, which was previously occupied by a farm equipment repair facility. The current uses of the project site include the two existing residences, both of which are occupied, associated outbuilding used for storage, grazing land for livestock, and a small garden and stand of fruit trees located between the residences and the Creek.

The Phase I ESA's review of federal, State, and local databases of known storage tank sites and known sites of hazardous materials generation, storage, and/or release was conducted to determine if the subject property or adjacent sites contain Recognized Environmental Conditions (RECs) that would impact surface and/or subsurface conditions

[20] Montrose Environmental Solutions. *Phase I Environmental Site Assessment: Falcon Point Associates, LLC, Creekwood Housing Development Project*. June 2022.

on-site. The database searches encompassed records of known sites within one mile of the project site. A REC indicates the presence or likely presence of any hazardous substances in, on, or at a property due to any release into the environment, under conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment. The project site is not listed on any of the reviewed databases. Although the Phase I ESA identified nine sites with 26 database listings, a site listed on a regulatory agency database does not necessarily mean a hazardous materials release occurred at the listed site. Further review determined that the sites either do not include listings indicating past releases of hazardous materials in violation of permitted operations, are of sufficient distance from the project site, and/or have remediated past releases of materials. Therefore, the Phase I ESA found that none of the listed nine sites in the project vicinity pose a material threat of a future release to the environment that could result in a potential impact as part of the project.

Finally, site visits were conducted on April 15, 2020; November 23, 2021; and April 7, 2022, as part of the Phase I ESA to identify current or historic hazardous materials involvement on the subject property. Hazardous materials involvement or signature environmental conditions include the presence or likely presence of any hazardous materials or petroleum products that indicate an existing release, past release, or a threat of release into any structure on-site, the soil, or groundwater. Signs of possible hazardous materials involvement include any indications of on-site underground storage tanks (USTs); stained soils and/or unusual odors originating from the site; indications of any excavation or removal of soils, including patched asphalt and large debris piles; and other obvious signs of hazardous materials involvement. As determined by the site reconnaissance, the project site does not include evidence of the following potentially hazardous conditions:

- USTs and associated piping;
- Odors;
- Pools of liquid;
- Unidentified substance containers;
- Polychlorinated biphenyls (PCBs);
- Pits, ponds, or lagoons;
- Stained soil;
- Stressed vegetation;
- Solid waste; and
- Wastewater discharges into drains, ditches, underground injection systems, or streams.

The final site visit included observations of yard maintenance equipment, a two-gallon gasoline can, a backpack sprayer, buckets used for storage, and an unlabeled drum used for garbage associated with the 270 Casa Grande Road outbuildings. The residence also featured an abandoned chicken coop, a pile of lumber, fence poles, siding, and several concrete blocks stored for future use. Several fruit trees and a garden plot east of the residence were also observed. While the above conditions could potentially represent RECs if operated improperly, the Phase I ESA found that none of the above conditions indicated improper storage of hazardous materials on-site. In addition, the identified fruit trees and garden are associated with the residence at 270 Casa Grande Road and not a commercial operation; therefore, the trees have not been subjected to levels of pesticides that could potentially expose future construction workers or project residents to health

risks, as such risks are typically more synonymous with pesticides applied to commercial orchards, which are subjected to much higher levels of pesticides.

As previously discussed, the residence at 280 Casa Grande Road was constructed as early as 1942. Asbestos is the name for a group of naturally occurring silicate minerals that are considered to be "fibrous" and through processing can be separated into smaller and smaller fibers. The fibers are strong, durable, chemical resistant, and resistant to heat and fire. Because of its fiber strength and heat resistance, asbestos has been used in a variety of building construction materials for insulation and as a fire retardant. Exposure to asbestos increases the risk of developing lung disease, such as lung cancer, mesothelioma, and asbestosis.[21] For buildings constructed prior to 1980, the Code of Federal Regulations (CFR) (Title 29, Section 1926.1101) states that all thermal system insulation (boiler insulation, pipe lagging, and related materials) and surface materials must be designated as "presumed asbestos-containing material" unless proven otherwise through sampling in accordance with the standards of the Asbestos Hazard Emergency Response Act. In addition, lead is a highly toxic material that may cause a range of serious illnesses, and in some cases death. Lead was most commonly used in paint. In 1978, the Consumer Product Safety Commission banned the use of lead as an additive to paint; however, lead-based paints (LBPs) could be present in structures built prior to 1970. Typically, human exposure to lead from older vintage paint could occur during renovation, maintenance, or demolition work. Given the age of the residence, the Phase I ESA determined that the residence potentially contains asbestos-containing insulation and LBPs. Should such conditions be present, demolition of the residence could expose construction workers and members of the public in the project vicinity to hazardous conditions. In addition, off-hauling of contaminated building materials and soils could result in contaminated dust emissions during removal and transport. As such, receptors located along off-hauling routes associated with the proposed demolition activities could be exposed to hazardous conditions.

Finally, the Phase I ESA determined that both on-site residences use septic tanks for wastewater disposal. As the 270 Casa Grande Road residence would be provided sewer service by the City through connecting to the existing sewer main Casa Grande Road, both septic tanks would require removal. Excavation and removal of the septic tank systems could damage the tanks or uncover defects in the tanks that potentially allow contamination to escape into the soil. As such, without proper removal of the septic tanks and soil testing to confirm contamination has not occurred, the project could create a significant hazard to the environment. Additionally, any on-site wells that could require abandonment, such as the private well associated with the 270 Casa Grande Road residence, could create a significant hazard to the environment, if they are not abandoned correctly.

Based on the above, without further measures to prevent the release of hazardous materials associated with asbestos, LBPs, and the on-site septic tanks, the project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Thus, a ***potentially significant*** impact could occur.

[21] U.S. Environmental Protection Agency. *Learn About Asbestos*. Available at: https://www.epa.gov/asbestos/learn-about-asbestos#find. Accessed August 2022.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impacts to a *less-than-significant* level.

IX-1 *Prior to issuance of a demolition permit by the City for the on-site structure at 280 Casa Grande Road, the project applicant shall provide a site assessment that determines whether the structure to be demolished contains lead-based paint (LBP) or asbestos. If the structure does not contain LBP or asbestos, further mitigation shall not be required; however, if LBP is found, all loose and peeling paint shall be removed and disposed of by a licensed and certified lead paint removal contractor, in accordance with California Air Resources Board recommendations and Occupational Safety and Health Administration (OSHA) requirements. If asbestos is found, all construction activities shall comply with all requirements and regulations promulgated through the Bay Area Air Quality Management District (BAAQMD) Asbestos Demolition and Renovation Program. The demolition contractor shall be informed that all paint on the building shall be considered as containing lead and/or asbestos. The contractor shall follow all work practice standards set forth in the Asbestos National Emission Standards for Hazardous Air Pollutants (Asbestos NESHAP, 40 CFR, Part 61, Subpart M) regulations, as well as Section V, Chapter 3 of the OSHA Technical Manual. Work practice standards generally include appropriate precautions to protect construction workers and the surrounding community, and appropriate disposal methods for construction waste containing lead paint or asbestos in accordance with federal, State, and local regulations subject to approval by the City Engineer.*

IX-2 *Prior to issuance of a demolition permit by the City for the on-site structure at 280 Casa Grande Road, the project applicant shall prepare an Off-Hauling and Disposal Plan that incorporates industry standard BMPs during proposed off-hauling activities associated with waste from on-site demolition activities. The following Best Management Practices (BMPs) shall be incorporated:*

- *During loading activities, the project contractor shall place two layers of heavy plastic sheeting (minimum thickness of six mils) beneath trucks to be used for off-hauling activities to collect any spilled soil;*
- *After each truck is loaded and prior to removing the plastic sheeting, visible dust or soil spilled during loading shall be removed from the top rails, fences, tires, and all other surfaces by dry brushing methods at the point of loading;*
- *Collected soil on the plastic sheeting shall be removed periodically to avoid the spreading of contaminated soil on truck tires;*
- *The soil shall be transported by a licensed transporter;*
- *All off-hauling trucks shall be loaded at the project site and appropriately covered (tarped), in accordance with U.S. Department of Transportation regulations;*

- *Loaded trucks shall use the most direct routes to the disposal site(s) to provide the least risk of exposure to surrounding communities and avoid residential areas to the maximum extent feasible and;*
- *Any additional BMPs determined necessary by the City Engineer.*

During loading activities, the project contractor shall ensure that all applicable work practice standards set forth in Section V, Chapter 3 of the OSHA Technical Manual are followed, including appropriate precautions to protect construction workers and the surrounding community, in accordance with applicable federal, State, and local regulations, including those set forth by the Sonoma County Environmental Health and Safety Division (SCEHD) and the Department of Toxic Substances Control (DTSC). The Off-Hauling and Disposal Plan shall be subject to approval by the City Engineer.

IX-3 *Prior to improvement plan approval, the project applicant shall ensure that the on-site septic systems are abandoned in compliance with applicable SCEHSD standards. Upon removal, the septic tanks shall be inspected for leaks. Should any leaks be identified, the project applicant shall conduct additional testing of soils at the location of the on-site septic systems for chemicals associated with the on-site septic systems in accordance with applicable USEPA Methods. Where concentrations exceed applicable DTSC screening levels, the soil shall be excavated and that portion of material shall be transported and disposed of off-site at an appropriate Class I or Class II facility permitted by DTSC, or other options implemented as deemed satisfactory to SCEHSD. The results of soil sampling and analysis, as well as verification of proper remediation and disposal, shall be submitted to the City of Petaluma Planning Division for review and approval. Any remediation shall be completed prior to acceptance of the site improvements for that phase.*

IX-4 *Prior to improvement plan approval, the project applicant shall hire a licensed well contractor to obtain a well abandonment permit from the SCEHSD for all on-site wells, and properly abandon the on-site wells, pursuant to Department of Water Resources Bulletin 74-81 (Water Well Standards, Part III), for review and approval by the SCEHSD.*

c. The project site is located immediately to the east of Casa Grande High School. Therefore, the project would be located within 0.25-mile of an existing school. However, as discussed under question 'a,' projects that emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste are typically industrial in nature. The project would not be industrial in nature and would, instead, consist of 62 dwelling units. Thus, operations of the project would not result in a significant impact to Casa Grande High School related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste.

As discussed under question 'b,' based on the age of the 280 Casa Grande Road residence, the project site could contain asbestos-containing building materials and LBP materials, which are considered potential RECs. Demolition of the residence and/or disposal of contaminated materials could, therefore, release hazardous emissions, materials, substances, and/or waste within 0.25-mile of Casa Grande High School. In

addition, off-hauling of contaminated building materials and soils could result in contaminated dust emissions during removal and transport, which could also potentially impact students and staff at Casa Grande High School.

However, the project would be subject to Mitigation Measures IX-1 and IX-3, which would ensure that all identified potential RECs within the project site are handled in accordance with federal, State, and local regulations. In addition, although off-hauling of contaminated building materials and soils could result in contaminated dust emissions during removal and transport, Mitigation Measure IX-2 requires compliance with SCEHD and DTSC regulations and incorporation of BMPs to ensure that demolition and/or off-hauling activities during project construction would not result in a significant impact related to contaminated dust emissions to Casa Grande High School.

Based on the above information, while the project site is located within 0.25-mile of Casa Grande School, the project would not result in substantial adverse effects related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste. Therefore, the project would result in a ***less-than-significant*** impact.

d. The project site is not identified on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[22] Therefore, the project would not create a significant hazard to the public or the environment, and ***no impact*** would occur.

e. The nearest airport to the site is the Petaluma Municipal Airport, which is located approximately 0.85-mile northwest of the site. As such, the project site is located within two miles of a public airport. However, pursuant to the City's Airport Safety Zones Map, the project site is not located within any of the safety zones established for the airport by the City of Petaluma, which provides oversight through the City's Airport Commission.[23] As such, safety hazards associated with Petaluma Municipal Airport would not occur. Potential noise impacts associated with the airport are discussed in Section XIII, Noise, of this IS. The project site is not located within two miles of another airport. Based on the above, the project would not result in a safety hazard or excessive noise for people residing or working in the project area, and a ***less-than-significant*** impact would occur.

f. The County of Sonoma manages a countywide evacuation map that is used to help identify areas under threat either by fire, flood, earthquake, or power outage and includes zones for areas within the City of Petaluma, as well as areas in other cities and unincorporated portions of the County.[24] The map indicates any current evacuation warnings or orders. Implementation of the project would not result in any substantial modifications to the City's existing roadway system, and thus, would not affect evacuation warnings or orders established by the countywide evacuation map.

In addition, the City maintains an Emergency Operations Plan to minimize the impact of emergencies, such as wildfires, power shutoffs, and/or flooding, through developed

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22 California Department of Toxic Substances Control. *Hazardous Waste and Substances Site List*. Available at: https://dtsc.ca.gov/dtscs-cortese-list. Accessed August 2022.

23 City of Petaluma. *Airport Safety Zones, Petaluma Municipal Airport*. Available at: https://cityofpetaluma.org/documents/airport-safety-zones-map/. Accessed August 2022.

24 City of Petaluma. *Emergency Evacuations*. Available at: https://cityofpetaluma.org/emergency-evacuations/. Accessed August 2022.

protocols and standards for handling such events.[25] Given the project's consistency with the site's land use designation and zoning designation, the project would not directly conflict with any of the goals established in the Emergency Operations Plan.

Finally, the City's General Plan EIR evaluated the potential for development facilitated by buildout of the General Plan planning area to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and found that while new development would include the addition of access points to the existing circulation and street system, new access points and/or streets in various parts of the City would be required to conform to the circulation efficiency regulations established by the PMC, which includes requirements for new access points to facilitate emergency response. The project would be required to be designed with applicable standards set forth by the PMC, including those established within the City of Petaluma Street Construction Standards. Additionally, the project would be consistent with the site's Medium Density Residential designation and would comply with applicable policies set forth by the General Plan. As such, the project would not result in impacts beyond what were identified in the General Plan.

Based on the above, the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and a ***less-than-significant*** impact would occur.

g. Issues related to wildfire hazards are discussed in Section XX, Wildfire, of this IS. As noted therein, according to the California Department of Forestry and Fire Protection's (CAL FIRE) Fire and Resource Assessment Program, the project site is located within a Local Responsibility Area (LRA).[26] CAL FIRE has determined that the City does not contain Very High Fire Hazard Severity Zones (FHSZs) in the City's LRA. Furthermore, the project site is located in a primarily developed area of the City, and the project would be consistent with what was anticipated for the site in the City's General Plan. In addition, PFD Station 3 is approximately 0.8-mile west of the site which would facilitate emergency response time to the project site. Finally, through development of the project, current on-site sources of fuel, such as undeveloped grassy areas and various trees, would be removed, thereby reducing the potential threat of wildland fire hazards. Therefore, the project would not expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, and a ***less-than-significant*** impact would occur. Please also refer to Section XX, Wildfire, of this IS.

[25] City of Petaluma. *City of Petaluma Emergency Operations Plan*. March 2022.

[26] California Department of Forestry and Fire Protection. *FHSZ Viewer*. Available at: https://egis.fire.ca.gov/FHSZ/. Accessed August 2022.

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

Discussion

a,ci, ciii. With respect to potential impacts related to degradation of surface or groundwater quality, project construction activities such as grading, excavation, and trenching would result in the disturbance of on-site soils. The exposed soils would have the potential to affect water quality in two ways: 1) suspended soil particles and sediments transported through runoff; or 2) sediments transported as dust that eventually reach local water bodies. As discussed in Section VII, Geology and Soils, of this IS, the project would be subject to the NPDES Construction General Permit, as the project would disturb approximately 4.56 acres. As part of compliance with the Construction General Permit, the project would be required to prepare a SWPPP, incorporating BMPs or equivalent measures designed to control surface runoff and erosion, retain sediment on-site, and prevent pollution of site runoff during the period in which preconstruction- and construction-related grading and/or soil storage occur, and before final improvements or permanent structures are completed. Through compliance with the NPDES Construction General Permit, the project would not result in substantial erosion or siltation on- or off-site during project construction.

After project construction activities are completed, impervious surfaces on the site could contribute incrementally to the degradation of downstream water quality during storm events. During the dry season, vehicles and other urban activities could release contaminants onto impervious surfaces, where they would accumulate until the first storm event. During the initial storm event, or first flush, the concentrated pollutants would be transported through stormwater runoff from the site to the Creek and eventually further

downstream. Typical urban pollutants that would likely be associated with the project would include sediment, household pesticides, oil and grease, nutrients, metals, bacteria, and trash. Runoff could also cause soil erosion if not properly addressed and provide a more lucrative means of transport for pollutants to enter the waterways. In such an event, the project could violate water quality standards or waste discharge requirements or degrade surface water quality, and a potentially significant impact could occur.

With respect to potential impacts related to site's existing drainage pattern, although the project site is currently developed with two existing residences, associated outbuildings, and paved and graveled driveways, the majority of the site consists of pervious surfaces such as undeveloped land covered in grasses, landscaped areas, and a small orchard. Development of the project would introduce new impervious surfaces associated with the proposed dwelling units, such as rooftops and paved driveways, as well as impervious surfaces associated with the internal looped street, sidewalks, and internal pathway system. Therefore, the project would introduce new impervious surfaces, which could substantially alter the existing drainage pattern of the site. Therefore, a ***potentially significant*** impact could occur.

Further analysis of the above potential impacts will be included in the Hydrology and Water Quality chapter of the 270 and 280 Casa Grande Road Creekwood Housing Development Project EIR.

b,e. The City of Petaluma's central and eastern lands are situated above the Petaluma Valley Groundwater Basin, as identified by the California Department of Water Resources (DWR) Bulletin 118, published in 2018. The State adopted the Sustainable Groundwater Management Act (SGMA) in 2014 that called for the creation of local Groundwater Sustainability Agencies (GSAs) to develop and implement Groundwater Sustainability Plans (GSPs) for the long-term management of a healthy and functioning groundwater resource. In 2018, the Petaluma Valley Groundwater Sustainability Agency (PVGSA) was formed from representative government agencies, including the City of Petaluma, to begin assessing baseline conditions, defining sustainability for the basin, and developing a GSP and corresponding projects.

The PVGSA finalized the GSP in December 2021 and submitted the plan to DWR in January 2022.[27] The GSP includes six sustainability indicators that measure conditions and activities potentially leading to unsustainable groundwater use, including chronic lowering of groundwater levels, reduction in groundwater storage, sea water intrusion, reduction of storage, land subsidence, degraded groundwater quality, and surface water degradation of water quality, subsidence, and depletion. As part of ensuring that projects within the GSP area do not result in unsustainable groundwater use, the GSP additionally includes annual monitoring of the aforementioned six criteria, data evaluation, and reporting requirements. The GSP, which establishes a standard for sustainability of groundwater management and use and determines how the basin will achieve the standard by 2042, incorporates applicable policies set forth in the City's General Plan. The project is consistent with the site's Medium Density Residential designation and would comply with applicable policies set forth by the General Plan. As such, the project would not conflict with or obstruct implementation of the GSP.

[27] Petaluma Valley Groundwater Sustainability Agency. *Groundwater Sustainability Plan Petaluma Valley Groundwater Basin*. December 2021.

Finally, the City's water supply is sourced from the Russian River Water System and occasionally supplemented with local groundwater. As such, the project would not rely primarily on groundwater.

Water from the Russian River Water System is obtained through the Petaluma Aqueduct by way of a contract with Sonoma Water (formerly Sonoma County Water Agency). The City's Water Resource and Conservation Division (WR&C) provides municipal water service to a population of 64,251, and therefore, must comply with the Urban Water Management Plan Act, which requires the preparation of an Urban Water Management Plan (UWMP) every five years. As discussed further in Section XIX, Utilities and Service Systems, of this IS, pursuant to Table 7-2 of the City of Petaluma 2020 UWMP, the City anticipates meeting its projected demand in every normal year, from 2025 through 2045.[28] According to Table 7-3 of the 2020 UWMP, the City anticipates a surplus of supply during a single dry year in 2025; however, in 2030, 2035, 2040, and 2045, the City expects shortfalls of 1,112 acre-feet (AF), 1,201 AF, 1,332 AF, and 1,485 AF, respectively. Based on Table 7-4 of the 2020 UWMP, the City anticipates meeting its projected demand in every year from 2025 to 2045 in multiple dry year scenarios. Although the City could experience a shortfall of water supply during single dry year scenarios from 2030 to 2045, the City's Water Shortage Contingency Plan (WSCP) contains the City's strategic plan in preparation for and response to water shortages, including the water shortage stages and associated actions that would be implemented in the event of a water supply shortage. As such, through implementation of the City's WSCP during shortfalls, the City would have sufficient supplies to serve demand within the City, including demand generated by the project.

Based on the above, the project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin or conflict with or obstruct implementation of the GSP. Therefore, a ***less-than-significant*** impact would occur.

cii,civ, d. The project site is within a SFHA currently designated by FEMA as Zone AE. Zone AE is defined by FEMA as an area within the 100-year floodplain. Flood events within the 100-year floodplain have a one percent chance of being equaled or exceeded in any given year. Pursuant to the City's General Plan EIR, substantial flooding has historically occurred in Petaluma when a series of closely spaced storms have moved through the Petaluma River watershed and prolonged high flows in tributary creeks, which include the Creek.

Due to the site's proximity to the Creek and location with Zone AE, depending on the severity of a potential storm event, the introduction of new impervious surfaces within the project site could result in an increased rate or amount of surface runoff, resulting in flooding on- or off-site, if the drainage management features that would be implemented as part of the project do not maintain post-project flows at the same rate and volume as pre-project flows. Similarly, post-project flows in excess of pre-project flows would have the potential to contribute runoff that exceeds the capacity of the City's storm drain system. Local modeling provides evidence that the project site is outside of the 100-year floodplain and further site-specific floodplain analysis will be included in the EIR. However, absent confirmation of the project site's elevation, flooding impacts could occur.

Furthermore, the project would include the placement of 90 CY of net fill on the banks of the Creek as part of development of the abutment fill slopes, including 78 CY placed below

[28] City of Petaluma. *2020 Urban Water Management Plan*. June 2021.

the 100-year floodplain base flood elevation. Because placement of fill on the banks of the Creek would displace waters that typically gathers in the floodplain, development of the off-site multi-use pathway and bridge connection could result in downstream water surface elevations, which could induce off-site flooding in downstream areas.

Based on the above, the project could substantially increase the rate or amount of surface runoff in a manner that results in flooding on- or offsite; impedes or redirects flood flows; or risks release of pollutants due to project inundation in a flood hazard zone. Thus, a ***potentially significant*** impact could occur.

Further analysis of the above potential impacts will be included in the Hydrology and Water Quality chapter of the 270 and 280 Casa Grande Road Creekwood Housing Development Project EIR.

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

Discussion

a. A project risks dividing an established community if the project would introduce infrastructure or alter land use so as to change the land use conditions in the surrounding community, or isolate an existing land use. The project site is currently developed with two existing single-family residences, several associated outbuildings, landscaped areas, a small orchard in the northeast corner, and paved and graveled areas associated with the driveways to the residences.

Implementation of the project would be consistent with the General Plan land use designation for the site. The project would result in the construction of 62 dwelling units, site improvements, and off-site improvements. The project would be consistent with the uses allowed in the Medium Density Residential land use designation and the R4 zoning district's permitted uses. Pursuant to the City's General Plan, the Medium Density Residential designation provides for a variety of dwelling types, including single-family and multifamily housing, and allows for a density ranging from 8.1 to 18.0 du/ac. The project would result in a density of 15.22 du/ac. In addition, single-family and multifamily residences are both permitted uses within the R4 zone. The proposed dwelling units would be required to be designed in accordance with the R4 Zone Development Standards set forth in Table 4.9 of IZO Section 4.040, including the City's standards for lot size, setbacks, and height limits. The City's existing roadway system would not be modified by the project. Additionally, the project would include sidewalk improvements along portions of the new internal looped private street and would construct an off-site public multi-use pathway with a bridge connection over the Creek to increase pedestrian connectivity in the project area.

Therefore, the project would be a continuation of the surrounding community and would not isolate an existing land use. As such, the project would not physically divide an established community, and a ***less-than-significant*** impact would occur.

b. The CEQA Guidelines require an EIR to discuss any inconsistencies between a project and applicable general plans, specific plans, and regional plans (Guidelines Section 15125[d]). The General Plan Guidelines published by the Governor's Office of Planning and Research defines consistency as, "An action, program, or project is consistent with the general plan if, considering all its aspects, it will further the objectives and policies of the general plan and not obstruct their attainment." Therefore, the standard for analysis used in this IS is based on general agreement with the policy language and furtherance of the policy intent (as determined by a review of the policy context). The determination that the project is consistent or inconsistent with the City of Petaluma General Plan policies or other plans and policies is ultimately the decision of the City of Petaluma decisionmakers. Furthermore, although CEQA analysis may identify some areas of general consistency with City policies, the City has the ability to impose additional requirements or conditions of approval on a project, at the time of its approval, to bring a project into more complete conformance with existing policies.

As discussed throughout this IS, the project would be generally consistent with General Plan policies adopted for the purpose of avoiding or mitigating environmental effects. Pursuant to Section I, Aesthetics, of this IS, the proposed dwelling units would be located beyond the 50-foot setback that applies to new development adjacent to the Creek, which would be consistent with Petaluma General Plan Policy 4-P-1, which prohibits development from occurring within 50 feet of any tributary of the Petaluma River. As discussed in Section II, Agriculture and Forestry Resources, of this IS, the loss of valuable agricultural lands would be considered a physical environmental impact. However, as demonstrated above, the project site is designated entirely as "Urban and Built-up Land," and, therefore, would not result in the conversion of Farmland to non-agricultural use. As such, the project would not conflict with General Plan Policy 3-P-8, which requires the City to recognize the value of, and protect the operation of, active river-dependent and agricultural-support uses located within the City.

Additionally, as discussed in Section III, Air Quality, of this IS, the BAAQMD's BCMMs would be required by the City as project conditions of approval. The BCMMs include, but are not limited to, requirements that minimize idling times and mandate that construction equipment be maintained and properly tuned in accordance with manufacturer's specifications. Through compliance with the BAAQMD BCMMs, the project would be consistent with General Plan Policy 4-P-16, which requires the reduction of combustion emissions during construction through maintenance of construction equipment in good condition and minimization of idling times. As discussed in Section VII, Geology and Soils, of this IS, the proposed buildings would be properly engineered in accordance with the CBSC, which includes engineering standards appropriate for Site Design Category D structures, such as the proposed dwelling units. Therefore, the project would be consistent with General Plan Policy 10-P-1, which requires that risks of property damage and personal injury posed by natural hazards be minimized. As discussed in Section XIII, Noise, of this IS, with implementation of Mitigation Measure XIII-1, the project would comply with applicable provisions of the Petaluma IZO during project construction and would not exceed applicable noise standards during project operation. Thus, the project would be consistent with General Plan Policy 10-P-3, which requires that the City protect public health and welfare by eliminating or minimizing the effects of existing noise problems and by minimizing the increase of noise levels in the future.

The General Plan includes other policies adopted for the purposes of avoiding environmental effects, some of which pertain to the technical issues that will be evaluated in the EIR, namely Biological Resources, Greenhouse Gas Emissions, Hydrology and Water Quality, and Transportation. For example, pursuant to Section IV, Biological Resources, of this IS, the Biological Resources chapter of the Creekwood Housing Development Project EIR will include an analysis of potential impacts to protected species, given the proximity of the project site to the Creek and its riparian corridor. As set forth in Section VIII, Greenhouse Gas Emissions, of this IS, because the project would contribute to increases of GHG emissions that are associated with global climate change during construction of the proposed residences, site improvements, and off-site improvements, as well as contribute to increased GHG emissions through new vehicle trips, the Greenhouse Gas Emissions chapter of the Creekwood Housing Development Project EIR will evaluate the project's consistency with applicable plans, policies, and/or regulations adopted for the purpose of reducing GHG emissions. Furthermore, due to the site's proximity to the Creek and SFHA designation, the Hydrology and Water Quality chapter of the Creekwood Housing Development Project EIR will evaluate the project's potential to result in flooding impacts and impacts to the existing drainage pattern of the site.

Based on the above, the project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and a ***less-than-significant*** impact would occur.

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

Discussion

a,b. Pursuant to the City of Petaluma General Plan EIR, the General Plan planning area does not contain mineral resources that would be affected by development facilitated by buildout of the General Plan in accordance with the General Plan Land Use Map.[29] The project would be consistent with the uses allowed within the Medium Density Residential land use designation. As such, the project would not result in impacts beyond those identified in the General Plan EIR, and ***no impact*** would occur.

[29] City of Petaluma. *City of Petaluma General Plan 2025 Environmental Impact Report* [pg. 4-6]. February 2008.

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

Discussion

a. The following is a discussion on the existing noise environment of the project site and surrounding vicinity, as well as an evaluation of the project's construction and operational noise levels. The discussion is based on a Noise and Vibration Assessment (Noise Assessment) prepared for the project by Illingworth & Rodkin, Inc. (see Appendix D of this IS).[30]

The following terms are referenced in the sections below:

- Decibel (dB): A unit of sound energy intensity. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels. All references to decibels (dB) in this section will be A-weighted unless otherwise noted;
- Day-Night Average Level (DNL or L_{dn}): The average sound level over a 24-hour day, with a +10 dB weight applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours;
- Average or Equivalent Sound Level (L_{eq}): L_{eq} is the average sound level over the period of measurement;
- Maximum Sound Level (L_{max}): L_{max} represents the highest noise level measured;
- Community Noise Equivalent Level (CNEL): CNEL is the weighted average noise level over a continuous 24-hour period with a +5.0 dB weight applied during evening hours (7:00 PM to 10:00 PM) and a +10 dB weight applied during nighttime and morning hours (10:00 PM to 7:00 AM); and
- L_1, L_{10}, L_{50}, and L_{90}: The A-weighted noise levels that are exceeded one percent, 10 percent, 50 percent, and 90 percent of the time, respectively, during the measurement period.

Existing Noise Environment

The existing noise environment at the project site results primarily from vehicular traffic on Casa Grande Road. Other sources of noise in the project area include residential and educational uses, seasonal sounds from water flows in the Creek and the associated

[30] Illingworth & Rodkin, Inc. *Creekwood Residential Development Noise and Vibration Assessment, 270-280 Casa Grande Road, Petaluma, California*. August 15, 2022.

riparian habitat, overhead noise from general aviation aircraft associated with the Petaluma Municipal Airport, and noise generated by activities associated with the Casa Grande High School campus. To quantify the general existing ambient noise environment within the project vicinity, the Noise Assessment conducted long-term (72-hour) and short-term (10-minute) ambient noise level measurements between January 4 and January 7, 2022. The monitoring sites are shown on Figure 14. The long-term noise measurement sites are identified as LT-1 and LT-2, and the short-term noise measurement sites are identified as ST-1 through ST-3. The results of the short-term measurements are shown in Table 8.

Table 8
Summary of Short-Term Noise Measurements, dBA

Site	L_{max}	L_1	L_{10}	L_{50}	L_{90}	L_{eq}	CNEL[1]
ST-1	58	52	49	48	47	48	47
ST-2	59	52	47	44	42	45	45
ST-3	57	56	53	50	46	50	50

[1] CNELs were estimated by correlation to the corresponding measurements at LT-1 and LT-2.

Source: Illingworth & Rodkin, Inc., 2022.

Noise Standards and Significance Criteria

Pursuant to Appendix G of the CEQA Guidelines, a project would be considered to result in significant noise impacts if noise levels would conflict with adopted environmental standards or plans or if noise generated by a project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. According to the Noise Assessment, a substantial permanent noise increase would occur if the noise level increase resulting from a project is 4.0 dBA CNEL, as established by the Petaluma General Plan. A substantial temporary noise level increase would occur where noise from construction activities exceeds 60 dBA L_{eq} and the ambient noise environment by at least 5.0 dBA L_{eq} at adjacent land uses in the project vicinity for a period of one year or more.

Project Construction Noise

During the construction of the project, heavy equipment would be used for site improvements, such as installation of utilities, excavation of foundations, building construction, paving, and landscaping. The hauling of excavated material and construction materials would generate truck trips on local roadways. The project would also include off-site construction of a multi-use path and installation of an off-site bridge over the Creek to connect to the existing trail to the east of the Creek, which would involve cut and fill work to level and bring the path on both sides of the Creek to that of the existing path, installation of concrete embankments, and installation of the bridge with a crane. Standard construction equipment, such as graders, backhoes, loaders, and trucks, would be used on-site. Typical noise levels generated by construction activities at a distance of 50 feet from the noise source would range between 83 and 84 dBA L_{eq} for ground-clearing activities; 88 and 89 dBA L_{eq} for excavation activities; 78 and 88 dBA L_{eq} for foundations; 79 and 87 dBA L_{eq} for building construction; and 84 and 89 dBA L_{eq} for finishing.

The construction of the project would generate noise and would temporarily increase noise levels at adjacent receivers. Potential noise impacts resulting from construction would depend on the noise generated by various pieces of construction equipment operating on-site, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive receptors.

Figure 14
Noise Measurement Sites

The proposed construction activities would be carried out in stages. During each stage, a different mix of equipment would be operating. Construction noise levels would vary by stage and vary within stages based on the amount of equipment in operation and location where the equipment is operating.

Pursuant to Table 6 of the Noise Assessment, typical construction noise levels at a reference distance of 50 feet from the source would range from 65 to 88 dBA. The nearest existing sensitive receptors are the residences located 40 to 60 feet from where proposed construction activities would occur. Site work activities during project construction at such distances would range from 73 to 90 dBA, with an average level of 82 dBA. Building construction activities at such distances would range from 63 to 90 dBA with an average level of 77 dBA. Due to spherical spreading loss, which results in a reduction of 6.0 dB per doubling of distance between the noise source and the receptor, the noise levels produced during most of the proposed construction activities, which would occur at distances of 300 feet or more from adjacent noise-sensitive uses, would produce average noise levels of 66 dBA or less during site work activities and 61 dBA or less during home building activities.

According to the Noise Assessment, a review of the proposed construction schedule indicates that on-site project construction activities would require 19 months to complete. In addition, the construction of the off-site multi-use path and bridge would require a week or less to complete. Based on such a timetable and the consideration that newly completed intervening homes would provide some degree of noise attenuation at surrounding existing residences, the construction noise levels at the various sensitive receptor locations would not exceed 60 dBA L_{eq} for a period of greater than a year. As discussed above, a substantial temporary noise level increase would occur where noise from construction activities exceeds 60 dBA L_{eq} and the ambient noise environment by at least 5.0 dBA L_{eq} at adjacent land uses in the project vicinity for a period of one year. Thus, the impact would not be considered significant.

In addition, pursuant to IZO Section 21.040, construction activities are restricted to the hours of 7:00 AM to 10:00 PM, Monday through Friday, and 9:00 AM to 10:00 PM on Saturday, Sunday, and State, federal and local holidays. The project would be required to comply with the foregoing construction times as part of compliance with the Petaluma IZO. Furthermore, with incorporation of standard noise control measures, such as locating stationary noise-generating equipment as far as possible from adjacent residential receivers and storing heavy equipment on-site to minimize the need for extra heavy truck trips, noise generated during the project construction would be reduced further.

However, without requirements to ensure that project construction activities incorporate standard noise control measures, temporary noise level increases would not be reduced to the maximum extent feasible. Thus, the project could generate a substantial temporary increase in ambient noise levels in the project vicinity in excess of applicable standards, and a significant impact could occur.

Project Operational Noise

The project would result in the development of new residential uses adjacent to the existing Casa Grande Senior Apartments to the north and the under-construction Casa Grande Subdivision to the south. Additionally, existing residential uses are located approximately 240 feet to the south and classroom buildings at Casa Grande High School are located 300 feet from the project site. The occupation and use of the proposed

residences are expected to result in typical noises associated with residential development, including voices of the new residents, home maintenance activities, barking dogs, and children. HVAC and other mechanical equipment associated with the project would also add noise to the existing environment.

Based on noise measurements completed at similar projects, the Noise Assessment found that the outdoor condensing units at the proposed residences could produce constant sound levels of 47 to 50 dBA L_{eq} at a distance of 50 feet from the noise source and could operate continuously during both daytime and nighttime hours. Considering the distances to the adjacent residential uses, noise generated by the proposed HVAC equipment would be well below the limit established by the City of Petaluma Noise Ordinance, which is 60 dBA L_{eq} at the closest adjacent residences. Additionally, as discussed above, in accordance with the Petaluma General Plan, a substantial noise increase would occur if the noise level increase resulting from a project is 4.0 dBA CNEL or more. Although noise resulting from the occupation of the new residences could noticeably change the noise environment in some adjacent residential areas, such noise is not expected to increase noise levels in any surrounding areas by 4.0 dBA or more and the noise associated with the proposed residences would not be incompatible with the surrounding land uses.

Based on the above, noise associated with operation of the proposed residences would not generate a substantial permanent increase in ambient noise levels in the project vicinity in excess of applicable standards, and a less-than-significant impact would occur.

Project Traffic Noise

The project would result in the development of 62 new dwelling units, which would increase traffic on roadways in the project vicinity. A significant impact from project-generated traffic noise would occur if traffic would substantially increase noise levels at sensitive receivers in the project vicinity. Pursuant to the Noise Assessment, a significant impact would occur if the project traffic on area roadways resulted in a noise level increase of 4.0 dBA CNEL or more.

Pursuant to Focused Traffic Study prepared for the project by W-Trans, the project would generate an average of 522 trips per day, including 38 trips during the AM peak hour and 49 during the PM peak hour. To cause a 4.0 dBA increase in noise along area roadways, the project would have to generate enough traffic to more than double current roadway volumes. Based on traffic volumes observed during the site noise surveys, the Noise Assessment determined that the number of traffic trips generated by the project would not double current roadway volumes.

Based on the above, noise associated with traffic generated by the proposed residences would not generate a substantial permanent increase in ambient noise levels in the project vicinity in excess of applicable standards, and a less-than-significant impact would occur.

Conclusion

Based on the above, although noise associated with operation of the proposed residences and traffic generated by residents would not generate a substantial permanent increase in ambient noise levels in the project vicinity, without requirements to ensure that project construction activities incorporate standard noise control measures, temporary noise level increases would not be reduced to the maximum extent feasible. Thus, the project could

generate a substantial temporary increase in ambient noise levels in the project vicinity in excess of applicable standards, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impacts to a *less-than-significant* level.

XIII-1 *The following criteria shall be included in the Improvement Plans. Exceptions to allow expanded construction activities shall be reviewed on a case-by-case basis, as determined by the Community Development Director.*

- *Limit construction hours to between 8:00 AM and 5:30 PM, Monday through Friday, and between 9:00 AM and 5:00 PM on Saturday. Construction activities shall be prohibited on Sundays and State, federal and local holidays;*
- *High noise-producing activities, such as excavation and grading and construction finishing, shall only occur between the hours of 8:00 AM and 5:00 PM to minimize disruption at adjacent noise sensitive uses;*
- *Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment;*
- *Locate stationary noise-generating equipment (e.g., compressors) as far as possible from adjacent residential receivers;*
- *Acoustically shield stationary equipment located near residential receivers with temporary noise barriers;*
- *Utilize "quiet" air compressors and other stationary noise sources where technology exists;*
- *The project contractor shall implement appropriate additional noise-reduction measures that include shutting off idling equipment after five minutes (as feasible) and notifying adjacent residences (at least one time) in advance of construction work;*
- *Construction workers; radios shall be controlled to not exceed ambient noise levels beyond the limits of the project site boundaries;*
- *Heavy equipment, such as paving and grading equipment, shall be stored on-site whenever possible to minimize the need for extra heavy truck trips on local streets;*
- *Two weeks prior to the commencement of construction, notification in writing shall be provided to residents within 500 feet of the project site and if during the school year, officials at the Casa Grande High School campus, disclosing the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period; and*
- *The project contractor shall designate a "disturbance coordinator" responsible for responding to any complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., bad muffler, etc.) and shall require that reasonable measures be implemented to correct the problem.*

b. Similar to noise, vibration involves a source, a transmission path, and a receiver. However, noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration is measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of peak particle velocities (PPV) in inches per second (in/sec). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of PPV. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 9, which was developed by Caltrans, shows the vibration levels that would normally be required to result in damage to structures or annoyance, respectively, from transient and continuous vibration. As shown in the tables, the threshold for architectural damage to structures is 0.20 in/sec PPV and continuous vibrations of 0.10 in/sec PPV, or greater, would likely cause annoyance to sensitive receptors.

Table 9
Guideline Vibration Damage Potential Threshold Criteria

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006 to 0.019	Threshold of perception, possibility of intrusion.	Vibration unlikely to cause damage of any type.
0.08	Vibrations readily perceptible.	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected.
0.10	Level at which continuous vibrations begin to annoy people.	Virtually no risk of architectural damage to normal buildings.
0.20	Vibrations annoying to people in buildings.	Threshold at which there is a risk of architectural damage to normal dwellings, such as plastered walls or ceilings.
0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations.	Vibration at this level would cause architectural damage and possibly minor structural damage.

Source: Illingworth & Rodkin, Inc., 2022.

The project would only cause elevated vibration levels during construction, as the project would not involve any uses or operations that would generate substantial groundborne vibration. Construction activities would include site preparation work such as grading and the installation of utilities, foundation work, and new building framing. Construction techniques that generate the highest vibration levels, such as impact or vibratory pile driving, are not expected as part of the project. Construction activities would generally occur at distances of 200 feet or more from the nearest residential uses, but activities near the northern project perimeter could occur at distances as close as 60 feet from existing senior residential units and activities near the southern project perimeter could occur at distances as close as 40 feet from the single-family homes currently under construction to the south. Project construction activities such as drilling, the use of jackhammers, rock

drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate substantial vibration in the immediate vicinity of such activities. Building framing, exterior and interior finishing, and landscaping activities are not anticipated to be sources of substantial vibration. Construction activities could extend over several construction seasons, but construction vibration would not be substantial for most of the time, except during vibration-generating activities.

Table 10 presents vibration source levels for typical construction equipment at distances of 40 and 60 feet. Jackhammers typically generate vibration levels of 0.017 to 0.009 PPV in/sec, drilling typically generates vibration levels of 0.044 to 0.024 PPV in/sec, and vibratory rollers generate vibration levels of 0.104 to 0.056 PPV in/sec at distances of 40 to 60 feet. Based on such levels, construction vibration levels would be well below the 0.20 in/sec PPV damage criteria for architectural damage to structures at the closest residential structures.

Table 10
Vibration Source Levels for Construction Equipment

Equipment	PPV at 40 Feet (in/sec)	PPV at 60 Feet (in/sec)
Clam Shovel Drop	0.100	0.054
Hydromill (Slurry Wall) in Soil	0.004	0.008
Hydromill (Slurry Wall) in Rock	0.008	0.017
Vibratory Roller	0.104	0.056
Hoe Ram	0.044	0.024
Large Bulldozer	0.044	0.024
Caisson Drilling	0.044	0.024
Loaded Trucks	0.038	0.020
Jackhammer	0.017	0.009
Small Bulldozer	0.004	0.004

Source: Illingworth & Rodkin, Inc., 2022.

In areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. However, as with any type of construction, such phenomenon would be anticipated and would not be considered significant given the intermittent and short duration of the phases that have the highest potential of producing vibration (i.e., jackhammers and vibratory rollers). By use of administrative controls such as notifying adjacent land uses of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration to hours with least potential to affect nearby residences, perceptible vibration could be kept to a minimum and, as such, would not result in a significant impact with respect to perception.

Based on the above, project operation would not include uses that would involve elevated vibration levels, and project construction would not generate excessive groundborne vibration or groundborne noise levels at the nearest existing sensitive receptors. Therefore, the project would result in a ***less-than-significant*** impact.

c. The nearest airport to the site is the Petaluma Municipal Airport, which is located approximately 0.85-mile northwest of the site. As such, the project site is located within two miles of a public airport. However, pursuant to Figure 3.9-2 of the City's General Plan EIR, the project site is not located within any of the airport's CNEL noise contours, which do not extend to South Ely Boulevard and, therefore, do not reach the project site.

Therefore, although noise generated by the Petaluma Municipal Airport could be experienced at the project site, such noise levels would be at a less-than-significant level.

Based on the above, the project would not expose people residing or working in the project area to excessive noise levels, and a ***less-than-significant*** impact would occur.

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

Discussion

a. As discussed in the City of Petaluma 2015-2023 Housing Element, as part of meeting the housing needs for anticipated population growth in the City, the ABAG Regional Housing Need Allocation (RHNA) for new construction in the City assigned a total of 745 new units, including 103 new low-income units and 121 new moderate-income units (see Table 2 of the Housing Element).[31] As part of meeting the RHNA requirements, the City's Housing Element identified residential land inventory opportunity sites, including Site #11, which encompasses 270 and 280 Casa Grande Road and also contains 240 and 250 Casa Grande Road. In total, the Housing Element estimated that Site #11 has a capacity for 92 units.

The project would include the development of 62 dwelling units; street, utility, and landscaping improvements; and an off-site public multi-use pathway and bridge connection. Development of the project could result in direct population growth by constructing new homes. Using the General Plan's average of 2.7 persons per household estimate for the City population, the project could generate a maximum of 168 new residents (2.7 persons per household x 62 dwelling units = 167.4 new residents). The project would be consistent with the Medium Density Residential land use designation and the R4 zoning district's permitted uses and would contribute to the City's ability to meet its RHNA requirements, particularly as the project would be developed in accordance with IZO Section 3.040 and reserve at least 15 percent of the new units as BMR units.

Pursuant to the City's General Plan, the Medium Density Residential designation provides for a variety of dwelling types, including single-family and multifamily housing, and allows for a density ranging from 8.1 to 18.0 du/ac. The project would result in a density of 15.22 du/ac. In addition, single-family and multifamily residences are both permitted uses within the R4 zone. Furthermore, the project would be developed in an urban area, with existing multifamily residences to the north; a single-family residential neighborhood to the east, across from the Creek; the under-construction Casa Grande Subdivision to the south; and the Casa Grande High School and Crinella Park are located to the west, across Casa Grande Road from the project site. Finally, the project would not involve extension of major infrastructure. New utility infrastructure associated with the project would be sized to accommodate only the proposed residential uses.

Based on the above information, the project would not induce substantial unplanned population growth either directly or indirectly, and a ***less-than-significant*** impact would occur.

[31] City of Petaluma. *City of Petaluma 2015-2023 Housing Element*. Revised November 19, 2018.

b. The project site is currently developed with two existing single-family residences, several associated outbuildings, landscaped areas, a small orchard in the northeast corner, and paved and graveled areas associated with the driveways to the residences. Although the project would include demolition of the on-site residence at 280 Casa Grande Road, the project would include a 0.637-acre Remainder that would not be a part of the proposed residential community. The purpose of the Remainder is to allow the property owner of 270 Casa Grande Road to retain their residence and continue to live on the property. As such, the project would not displace a substantial number of existing housing or people and would not necessitate the construction of replacement housing elsewhere. Therefore, a ***less-than-significant*** impact would occur.

XV. PUBLIC SERVICES. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	✖	☐
b. Police protection?	☐	☐	✖	☐
c. Schools?	☐	☐	✖	☐
d. Parks?	☐	☐	✖	☐
e. Other Public Facilities?	☐	☐	✖	☐

Discussion

With respect to public services, the relevant CEQA threshold is whether new or physically altered facilities are needed to meet response times or other performance objectives, the construction of which could cause environmental impacts. The discussions below evaluate the project's potential to necessitate such facilities.

a. The PFD provides fire, rescue, and emergency medical services to the City of Petaluma as well as to a 160-square-mile area of unincorporated Sonoma County surrounding the City. The PFD responds to structural and wildfires, emergency medical service requests, and hazardous/toxic spills in the City. In total, the PFD is comprised of 58 paid personnel on staff that work 48-hour rotating shifts. The minimum staffing for each shift is 15 personnel, which includes the staffing of three engines, one aerial ladder truck and two paramedic advanced life support ambulances.[32] The PFD consists of three fire stations, the closest of which to the project site is Station 3, approximately 0.8-mile west of the site.

Pursuant to General Plan Policy 7-P-19, the PFD seeks to maintain a four-minute travel time for a total six-minute response time for emergencies within the City. Given the relatively short distance between Station 3 and the project site, the PFD would be able to respond to service calls from the site well within an acceptable time frame, consistent with Policy 7-P-19 (see Figure 3.4-2 of the General Plan EIR). In addition, pursuant to PMC Section 19.04.020, new development within the City is subject to the City's Facilities Development Impact Fee. The purpose of the fee is to ensure that new development pays a fair share of the construction and acquisition costs associated with new or expanded public facilities (i.e., aquatic center, community center, fire suppression, law enforcement, library and public facilities, etc.). As such, revenues generated through the project's payment of the City Facilities Development Impact Fee would pay the project's fair share toward any new fire facilities deemed necessary by the City.

Finally, the City's General Plan EIR evaluated the potential for development facilitated by buildout of the General Plan planning area in accordance with the General Plan Land Use Map to require fire protection in excess of the PFD's staffing levels and facilities and concluded that with incorporation of applicable General Plan policies, a less-than-significant impact would occur. The project is consistent with the uses allowed within the Medium Density Residential land use designation and would be required to comply with

[32] City of Petaluma. *Fire*. Available at: https://cityofpetaluma.org/departments/fire/. Accessed June 2022.

applicable General Plan policies and regulations set forth by the PMC. Therefore, the project would not result in impacts beyond those identified in the General Plan EIR. Thus, the project would not require the provision of new or physically altered fire protection facilities, the construction of which could cause environmental impacts, and a ***less-than-significant*** impact would occur.

b. The PPD provides police services to the City. The PPD consists of a chief of police, deputy chief, four administration lieutenants, patrol services (managed by two lieutenants and comprised of two platoons) two full-time K-9 teams, a community services officer, and special services (including investigations and traffic teams, SWAT, hostage negotiations, and gang enforcement).[33] The police station is located at 969 Petaluma Boulevard North, approximately 2.6 miles west of the project site.

Pursuant to General Plan Policy 7-P-36, the City seeks to ensure that adequate police staff are available to provide rapid and timely response to all emergencies and maintain the capability to have minimum average response times; however, Policy 7-P-36 does not include a specific response time with which the PPD seeks to respond to calls. Responses by the police to calls are prioritized by urgency. In addition, as discussed, pursuant to PMC Section 19.04.020, new development within the City is subject to the City's Facilities Development Impact Fee. Revenues generated through the project's payment of the City Facilities Development Impact Fee would pay the project's fair share toward any new police facilities deemed necessary by the City.

Finally, the City's General Plan EIR evaluated the potential for development facilitated by buildout of the General Plan planning area in accordance with the General Plan Land Use Map to require law enforcement services in excess of the PPD's staffing levels and facilities and concluded that with incorporation of applicable General Plan policies, a less-than-significant impact would occur. The project is consistent with the uses allowed within the Medium Density Residential land use designation and would be required to comply with applicable General Plan policies and regulations set forth by the PMC. Therefore, the project would not result in impacts beyond those identified in the General Plan EIR. Thus, the project would not require the provision of new or physically altered law enforcement facilities, the construction of which could cause environmental impacts, and a ***less-than-significant*** impact would occur.

c. The City of Petaluma is served by four elementary school districts, including the PCESD. All of the City's 10 secondary schools are under the oversight of the PJUHSD, which serves populations within and outside the City limits. The PJUHSD and PCESD operate under an umbrella agency called Petaluma City Schools (PCS). Within the City limits, PCS runs eight elementary schools, including two charter schools and an alternative school, two junior high schools (seventh through eighth grade), a community day school for seventh and eighth grades, and six high schools, including three small continuation schools and an alternative school. Petaluma also consists of two private elementary schools, a private high school, and two charter schools.

Although development of 62 new dwelling units would increase the student population within the City of Petaluma, the project would be required to pay developer fees set forth by the school districts in the City for new residential construction in the City. Proposition

[33] City of Petaluma. *Police Divisions*. Available at: https://cityofpetaluma.org/police-divisions/. Accessed September 2022.

1A/SB 50 prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "legislative or adjudicative act involving the planning, use, or development of real property" (Government Code Section 65996[b]). Satisfaction of the Proposition 1A/SB 50 statutory requirements by a developer is deemed to be "full and complete mitigation." As such, according to SB 50, the payment of the necessary school impact fees for the project would be full and satisfactory CEQA mitigation.

In addition, the General Plan EIR evaluated the potential for development facilitated by buildout of the planning area in accordance with the General Plan to generate additional elementary and secondary school enrollment above projected school capacity and concluded that with incorporation of applicable General Plan policies, a less-than-significant impact would occur. The project is consistent with the uses allowed within the Medium Density Residential land use designation and would be required to comply with applicable General Plan policies, regulations set forth by the PMC, and developer fees assessed by school districts in the City. Therefore, the project would not result in impacts beyond those identified in the General Plan EIR.

Based on the above, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools. Therefore, the project would result in a ***less-than-significant*** impact.

d. The City of Petaluma contains 200.5 acres of City-owned parks, including 125.3 acres of community parks, 73 acres of neighborhood parks, and 2.2 acres of other park areas. Community parks serve a citywide population and typically include sports facilities, such as lighted fields, courts, swimming pools, recreation buildings, and other special-use facilities. Restrooms and off-street parking are generally provided. The largest community parks in the City are Lucchesi, Wisemen, and Prince parks. Neighborhood parks are devoted primarily to serving a small portion of the City, usually within walking and biking distance from residences. The parks are typically designed for nonorganized and unsupervised recreation activities. Play equipment, ball fields, open turf areas, and picnic tables may be provided; however, restrooms and off-street parking are generally not. Pocket parks are very small park sites (often less than one acre) providing tot lots and small-scale facilities to a localized area. The City contains approximately 2.2 acres of pocket parks, many of which are located within or near multifamily developments.

Pursuant to General Plan Policy 6-P-6, the City maintains a park standard of five acres per 1,000 residents. The project would include development of 62 dwelling units. Using the General Plan's average of 2.7 persons per household estimate for the City population, the project could generate a maximum of 168 new residents (2.7 persons per household x 62 dwelling units = 167.4 new residents). Based on such an amount, the project would be required to include 0.84-acre of new parkland. The project does not include park acreage. However, pursuant to PMC Section 19.16.020, the project would be subject to the City's Park Land Development Impact Fee. In addition, the project would be subject to the City's Park Land Acquisition In-Lieu Fees set forth by PMC Section 20.34.100, which requires payment of fees commensurate with the amount of parkland required by Municipal Code Section 20.34.090. Revenues generated through the project's payment of

the fees would pay the project's fair share toward any new park facilities deemed necessary by the City.

Based on the above, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks. Therefore, the project would result in a ***less-than-significant*** impact.

e. The City of Petaluma owns and operates other recreational and cultural facilities, which offer recreational and educational services, as well as foster a sense of community identity and pride. The key City-owned recreational and cultural facilities include:

- City Hall;
- Petaluma Community Center;
- Jack Cavanaugh Recreation Center;
- Petaluma Marina;
- Petaluma Historical Museum/Library;
- Petaluma Senior Center; and
- Petaluma Adult/Senior Center.

As discussed above, pursuant to PMC Section 19.04.020, new development within the City is subject to the City's Facilities Development Impact Fee. Revenues generated through the project's payment of the City Facilities Development Impact Fee would pay the project's fair share toward any new recreational and cultural facilities deemed necessary by the City.

Finally, the City's General Plan EIR evaluated the potential for development facilitated by buildout of the General Plan planning area in accordance with the General Plan Land Use Map to require development of new recreational and cultural facilities and concluded that with incorporation of applicable General Plan policies, a less-than-significant impact would occur. The project is consistent with the uses allowed within the Medium Density Residential land use designation and would be required to comply with applicable General Plan policies and regulations set forth by the PMC. Therefore, the project would not result in impacts beyond those identified in the General Plan EIR.

Based on the above, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other facilities. Therefore, the project would result in a ***less-than-significant*** impact.

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

Discussion

a,b. As established by General Plan Policy 6-P-6, the City of Petaluma maintains a park standard of five acres per 1,000 residents. The project would include development of 62 dwelling units, which could result in a maximum of 168 new residents, which would necessitate 0.84-acre of new parkland. Pursuant to PMC Section 19.16.020, the project would be subject to the City's Park Land Development Impact Fee. In addition, the project would be subject to the City's Park Land Acquisition In-Lieu Fees set forth by PMC Section 20.34.100, which requires payment of fees commensurate with the amount of parkland required by Municipal Code Section 20.34.090. Revenues generated through the project's payment of the fees would pay the project's fair share toward any new park facilities deemed necessary by the City.

Based on the above, the project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated or include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Therefore, the project would result in a ***less-than-significant*** impact.

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

Discussion

a. The project would include internal street and frontage improvements, as well as a new off-site public multi-use pathway with a bridge connection over the Creek. The increase in population associated with the project would subsequently generate additional vehicle trips on local roadways. The addition of project-generated traffic has the potential to conflict with a program, plan, ordinance, or policy addressing the circulation system. In addition, the increase in population would also increase the demand for bicycle, pedestrian, and transit facilities. Further evaluation is required in order to assess whether adequate capacity exists to support the additional demand for such facilities.

Based on the above, the project could result in a ***potentially significant*** impact related to conflicting with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Further analysis of the above potential impact will be included in the Transportation chapter of the Creekwood Housing Development Project EIR.

b. Pursuant to Section 15064.3 of the CEQA Guidelines, analysis of vehicle miles travelled (VMT) attributable to a project is considered the most appropriate measure of transportation impacts for CEQA purposes. Other relevant considerations may include the effects of the project on transit and non-motorized travel.

The project would generate new vehicle trips associated with the proposed residences. Should the future residents of the project require commutes to jobs located outside of the City, trip lengths associated with the project could be longer than the regional average. Given the increase in vehicle trips associated with the project, as well as the anticipated range in vehicle trip lengths, a ***potentially significant*** impact related to VMT could occur.

Further analysis of the above potential impact will be included in the Transportation chapter of the 270 and 280 Casa Grande Road Creekwood Housing Development Project EIR.

c,d. Access to the project site would be provided by two new entries from Casa Grande Road (see Figure 5). From the two entry points, a new internal looped private street would extend eastward into the project site, providing access to all proposed dwelling units, as well as the existing residence at 270 Casa Grande Road. The proposed street would be comprised of two 10-foot-wide driving lanes along all segments.

Considering the limited number of proposed dwelling units and the access throughout the site that would be provided by the new internal street, emergency access is expected to be acceptable. In addition, roadway hazards are not anticipated. Nonetheless, the project would increase traffic in the vicinity of Casa Grande High School, which could result in an associated increase in traffic-related hazards or affect emergency access in the project area.

Without further evaluation, the project could result in a ***potentially significant*** impact related to an increase in hazards from design features or incompatible uses, or inadequate emergency access to the project.

Further analysis of the above potential impact will be included in the Transportation chapter of the Creekwood Housing Development Project EIR.

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

Discussion

a,b. As discussed in Section V, Cultural Resources, of this IS, the CRS similarly determined the site does not contain any recorded archaeological resources. In addition, as part of the CRS, a request was sent to the NAHC seeking information from the Sacred Lands File regarding the project site, which returned results indicating the site does not contain any known tribal cultural resources.

In compliance with AB 52 (PRC Section 21080.3.1), a project notification letter was distributed to the Federated Indians of Graton Rancheria on May 26, 2022 The Federated Indians of Graton Rancheria submitted a response on June 16, 2022 requesting formal consultation with the lead agency, and in response, the City, as the lead agency, initiated consultation with and met with the tribe on August 31, 2022.

Based on the consultation with Graton Rancheria, the possibility exists that construction of the project could result in a substantial adverse change in the significance of a tribal cultural resource. Thus, a ***potentially significant*** impact to tribal cultural resources could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

XVIII-1 *To protect buried tribal cultural resources that may be encountered during ground disturbing activities, the project shall implement Mitigation Measure V-1.*

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

Discussion

a-c. Brief discussions of the water, wastewater, stormwater drainage, electrical, natural gas, and telecommunications facilities that would serve the project are included below.

Water

The City's water supply is sourced from the Russian River Water System and occasionally supplemented with local groundwater. Water from the Russian River Water System is obtained through the Petaluma Aqueduct by way of a contract with Sonoma Water (formerly Sonoma County Water Agency). The City's WR&C provides municipal water service to a population of 64,251, and therefore, must comply with the Urban Water Management Plan Act, which requires the preparation of an UWMP every five years. Pursuant to Table 7-2 of the City of Petaluma 2020 UWMP, during a normal year, the City anticipates meeting its projected demand in every year, from 2025 through 2045.[34] According to Table 7-3 of the 2020 UWMP, the City anticipates a surplus of supply during a single dry year in 2025; however, in 2030, 2035, 2040, and 2045, the City expects respective shortfalls of 1,112 AF, 1,201 AF, 1,332 AF, and 1,485 AF, respectively. Based on Table 7-4 of the 2020 UWMP, the City anticipates meeting its projected demand in every year from 2025 to 2045 in multiple dry year scenarios.

Although the City could experience a shortfall of water supply during single dry year scenarios from 2030 to 2045, the City's WSCP contains the City's strategic plan in preparation for and response to water shortages, including the water shortage stages and associated actions that would be implemented in the event of a water supply shortage. During single dry water years, the City anticipates a supply reduction from Sonoma Water

[34] City of Petaluma. *2020 Urban Water Management Plan*. June 2021.

for each year beginning in 2030, as described in Sonoma Water's 2020 UWMP. The City anticipates receiving the following percentages of a normal year supply from Sonoma Water during a single dry year scenario through 2045: 2025 (100 percent), 2030 (90.3 percent), 2035 (89.6 percent), 2040 (88.7 percent), and 2045 (87.7 percent). According to the City's 2020 UWMP, in the event of a single dry year that results in a deficit in water supply, the City would enact the 2020 WSCP based on supply shortage to reduce customer demand, and appropriate water shortage response actions would be taken to ensure demand does not exceed supply during a water shortage scenario. Such response actions would include demand reduction actions, including, but not limited to, public information campaigns, increased frequency of meter readings, water use surveys, rebates on plumbing fixtures and devices, rebates for turf replacement, water waste patrols, limiting landscape irrigation to specific times, and prohibiting potable water use for washing hard surfaces.

The analysis within the 2020 UWMP incorporated the adopted land uses within the City's General Plan as part of its evaluation. Considering that the project would be consistent with the site's Medium Density Residential land use designation, buildout of the project site with the proposed uses was captured in the water demand assumptions of the 2020 UWMP. As such, the project would not result in a shortfall beyond that identified in the 2020 UWMP and water shortage response actions set forth in the 2020 WSCP would address potential shortfalls in water supply that could occur through development of the project. Based on the above, with implementation of the WSCP during single dry year shortfall scenarios, the City would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, and a less-than-significant impact would occur.

The project would be provided water service by the City of Petaluma through new connections to the existing water main in Casa Grande Road (Figure 7). Consistent with PMC Section 15.08.120 and the City of Petaluma Water System Design Guidelines, which require main extensions to be at a minimum diameter of eight inches, a new eight-inch water line would be extended into the project site within the ROW of the new internal private street. The proposed dwelling units would connect to the new eight-inch water line through new water laterals. In addition, pursuant to PMC Section 19.28.020, the project would be subject to the City's Water Capacity Fee, the revenues from which would help fund future construction of water facilities in the City's service area.

Based on the above, the project would not require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects, and a less-than-significant impact would occur.

Wastewater Conveyance and Treatment

The project would be provided sanitary sewer conveyance service by the City of Petaluma through new connections to the existing sewer main in Casa Grande Road (Figure 7). Consistent with the City of Petaluma Sewer System Design and Construction Guidelines, a new eight-inch sewer line would be extended into the project site within the ROW of the new internal private street. The proposed dwelling units would connect to the new eight-inch sewer line through new sanitary sewer laterals. Pursuant to PMC Section 19.32.020, the project would be subject to the City's Wastewater Capacity Fee, the revenues from which would help fund future construction of sanitary sewer facilities in the City's service area.

With respect to the potential for the wastewater treatment provider to determine adequate capacity exists to serve the project's projected demand in addition to the provider's existing commitments, the Ellis Creek Water Recycling Facility treats all wastewater generated by the City of Petaluma and the unincorporated community of Penngrove. The collection system is comprised of approximately 195 miles of underground piping and nine pump stations. During the summer, effluent receives tertiary treatment and the recycled water is used for irrigation of agricultural lands, golf courses, City parks, schools, and landscaped areas of residential and commercial development. In the winter, secondary treated wastewater effluent is conveyed to the Petaluma River. The treatment capacity is approximately 6.7 million gallons per day (average dry weather flow).[35] Approximately five million gallons per day are treated under the existing wastewater generation condition, leaving approximately 1.7 million gallons in available treatment capacity. Based on the available capacity remaining at the City's treatment facility, the City's wastewater infrastructure and treatment facility are anticipated to be sufficient to accommodate the increased demand that would be generated by the project.

The General Plan EIR evaluated the potential for development facilitated by buildout of the General Plan planning area to necessitate the need to expand wastewater treatment facilities, the construction of which could cause significant environmental effects and concluded that with compliance with applicable General Plan policies, a less-than-significant impact would occur. The project would comply with applicable General Plan policies. For instance, as discussed, the project would be subject to the City's Wastewater Capacity Fee, which would ensure the project contributes a fair share to fund future construction of sanitary sewer facilities in the City's service area. However, General Plan Policy 8-P-15 provides that as part of maintaining and, if necessary, expanding capacity at the Ellis Creek Water Recycling Facility, the City may require conditions of approval for all public and private development. The project would be required to comply with all conditions of approval adopted by the Petaluma City Council as part of project approval, including any related to wastewater facilities. Therefore, the project would be consistent with General Plan Policy 8-P-15. Considering that the project would be consistent with the site's Medium Density Residential land use designation and would be consistent with applicable General Plan policies, the project would not result in impacts beyond those identified in the General Plan EIR.

Based on the above, the project would not require or result in the relocation or construction of new or expanded wastewater facilities, the construction or relocation of which could cause significant environmental effects, and the wastewater treatment provider which would serve the project would have adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments. Thus, a less-than-significant impact would occur.

Stormwater

Potential impacts related to water quality and development within the 100-year FEMA floodplain will be addressed in the Hydrology and Water Quality chapter of the of the Creekwood Housing Development Project EIR. With respect to the new storm drain infrastructure that would be implemented as part of the project, the project would include new on-site stormwater facilities to treat and hold back (i.e., "detain") stormwater runoff so that the amount of runoff from the developed site would not exceed the site's current runoff rates. The project site's stormwater facilities would be dispersed across five DMAs (see

[35] City of Petaluma. *Recycled Water Master Plan* [pg.IV-2]. June 2004.

Figure 8). DMAs 1 through 4 would encompass the Block 1 units and would each contain corresponding BRAs 1 through 4. DMA 5 would encompass the new internal street, Blocks 2 and 3 units, and BRA 5.

Within DMAs 1 through 4, runoff from impervious surfaces would be directed to grassy areas, where flows would be collected by inlets and conveyed by way of private storm drain lines to each DMA's BRA for retention and treatment. Following retention and treatment, flows would be metered and released to the Creek. In addition, a floodwater detention basin would be constructed immediately east of DMA 4 to accept surface flow from waters overtopping the Creek bank or backing up through the storm drain system. Similarly, within DMA 5, runoff would be directed to inlets installed in each dwelling unit's backyard area and to gutters installed along the new internal street. From the inlets and gutters, flows would be conveyed by way of new private storm drain lines to BRA 5 for retention and treatment. From BRA 5, treated flows would be metered to the Creek. All new storm drain infrastructure would be designed in accordance with the City's Storm Drain System Construction Standards.

The final drainage system design for the project would be subject to review and approval by Sonoma Water to confirm that the proposed drainage system for the project is consistent with applicable standards. Therefore, the project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects, and a less-than-significant impact would occur.

Electricity and Telecommunications

Electricity would be provided by PG&E and Sonoma Clean Power, a community choice program provider that sells electricity generated from renewable energy sources that is then delivered through PG&E's grid. Internet and telephone services would be provided by Comcast Xfinity or a similar service provider operating within the City. The project would not require major upgrades to, or extension of, existing infrastructure. Thus, impacts to electricity and telecommunications infrastructure would be less than significant. As noted previously, the project would not include the installation of natural gas infrastructure.

Conclusion

Based on the above information, the project would not require or result in the relocation or construction of new or expanded utility facilities, the construction or relocation of which could cause significant environmental effects. Additionally, the City would have sufficient water supplies to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years and adequate capacity to serve the project's projected wastewater services demand in addition to the City's existing commitments. Therefore, the project would result in a ***less-than-significant*** impact.

d,e. Solid waste disposal services are provided to the City of Petaluma by Recology Sonoma Marin, a private company under contract with the City. Recology provides canisters to residences to dispose of garbage, green (plant waste) materials, and recycling. Following weekly curbside collection, Recology transports the cannister contents to the Sonoma County solid waste transfer and disposal facilities, which are owned and operated by the Sonoma County Department of Transportation and Public Works. The County also helps maintain the Countywide Integrated Waste Management Plan (CoIWMP) jointly with the Sonoma County Waste Management Agency (SCWMA). Solid waste is disposed of at the

Central Landfill, located at 500 Mecham Road. Pursuant to the California Department of Resources Recycling and Recovery, the landfill has a cease operation date of June 1, 2043, a maximum permitted capacity of 32.650,000 CY, and a remaining capacity of 9,181,519 CY.[36] Given the remaining capacity available at the Central Landfill, solid waste generated by the proposed dwelling units would be accommodated at the disposal site.

The General Plan EIR evaluated the potential for development facilitated by buildout of the General Plan planning area to result in increased demand for solid waste disposal and concluded that through compliance with applicable General Policies, a less-than-significant impact would occur. The project is consistent with the project site's Medium Density Residential land use designation and would be consistent with policies set forth by the General Plan. For example, General Plan Policy 4-P-21 requires new residential uses to incorporate sufficient, attractive, and convenient interior and exterior storage areas for recyclables and green waste as part of reducing solid waste and increasing reduction, reuse, and/or recycling, in compliance with the ColWMP. Given that the project would be provided cannisters for green materials and recycling, the project would be consistent with General Plan Policy 4-P-21. In addition, all new development must also comply with the CALGreen Code, which requires diversion of at least 65 percent of construction waste from landfills. As such, the project would not result in impacts beyond those identified in the General Plan EIR.

Based on the above, given that the project is consistent with the project site's General Plan land use designation and would comply with applicable policies set forth in the General Plan, the project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. The project would comply with federal, State, and local management and reduction statutes and regulations related to solid waste. Therefore, the project would result in a ***less-than-significant*** impact.

[36] California Department of Resources Recycling and Recovery. *SWIS Facility/Site Activity Details: Central Disposal Site (49-AA-0001)*. Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1224?siteID=3621. Accessed September 2022.

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

Discussion

a-d. Pursuant to CEQA Guidelines Appendix G, the above questions are only relevant when a project's location is within a State Responsibility Area (SRA) or Very High FHSZ. The project site is not located within land designated as either. Rather, according to CAL FIRE's FHSZ Viewer, the project site is located within a LRA that is not designated as a Very High FHSZ.[37]

Nevertheless, for informational purposes it is noted that the project would not conflict with the City's Emergency Operations Plan. The City relies upon the County of Sonoma's countywide evacuation map, which is used to help identify areas under threat either by fire, flood, earthquake, or power outage and includes zones for areas within the City of Petaluma, as well as areas in other cities and unincorporated portions of the County.[38] The map indicates any current evacuation warnings or orders. The project site is located in zone PTL015B. Implementation of the project would not result in any substantial modifications to the City's existing roadway system, and thus, would not affect evacuation warnings or orders established by the countywide evacuation map.

In addition, the project site is not located on a substantial slope. Although the project site currently consists of undeveloped land covered in grasses, landscaped areas, and a small orchard, which could provide fuel sources in the event of a wildfire, development of the site with residential uses would reduce the risk of wildland fire to surrounding areas, because site improvements, such as roadways, driveways, and irrigated landscaping, would reduce readily combustible vegetation. Although the riparian corridor along the Creek would be largely maintained as part of the project, which would preserve existing sources of fuel, structures would not be constructed within the 50-foot setback from the top of the Creek bank, which would thereby prevent the placement of new structures immediately adjacent to such fuel sources. In addition, as discussed in Section VII,

[37] California Department of Forestry and Fire Protection. *FHSZ Viewer*. Available at: https://egis.fire.ca.gov/FHSZ/. Accessed August 2022.

[38] City of Petaluma. *Emergency Evacuations*. Available at: https://cityofpetaluma.org/emergency-evacuations/. Accessed September 2022.

Geology and Soils, development of the project would not expose people or structures to significant risks related to landslides.

Furthermore, wildfire risks would not be anticipated to be exacerbated during project operation, as residential uses typically do not involve operational components that would increase the risk of wildfire. The project would be required to be designed in compliance with the California Fire Code, California Building Code, and the California Strategic Fire Plan. Finally, pursuant to PMC Section 17.20.050, the Fire Chief would maintain the right to enter the proposed dwelling units prior to occupation to inspect and determine if the provisions of the California Fire Code and all applicable laws or ordinances have been followed as part of the construction of the units.

Based on the above, regulations are in place to ensure that the project would not expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, and a ***less-than-significant*** impact would occur.

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

Discussion

a. As discussed in Section IV, Biological Resources, of this IS, because the project would involve construction activities immediately adjacent to and within the Creek and its associated riparian corridor, development of the project has the potential to result in substantial adverse effects to special-status species, riparian habitats or other sensitive natural communities, and/or State or federally protected wetlands. Therefore, further analysis is required to ensure that the project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal. Without further analysis, the project could result in a ***potentially significant*** impact.

Further analysis of the above potential impact will be included in the Biological Resources chapter of the 270 and 280 Casa Grande Road Creekwood Housing Development Project EIR.

b,c. The project, in conjunction with other development within the City and surrounding region, could incrementally contribute to cumulative impacts in the project area. In particular, as discussed in Section VIII, Greenhouse Gas Emissions, of this IS, buildout of the project would contribute to increases of GHG emissions that are associated with global climate change during construction of the proposed residences, site improvements, and off-site improvements. In addition, during project operations, new vehicle trips associated with the future residents of the project would contribute to increases of GHG emissions associated with global climate change. In the absence of appropriate mitigation, the project could cause substantial adverse effects on human beings. As such, without further analysis, the project could result in a ***potentially significant*** impact.

Further analysis of the above potential impact will be included in the technical chapters of the 270 and 280 Casa Grande Road Creekwood Housing Development Project EIR.

Appendix A

Construction Health Risk and Greenhouse Gas Assessment

CREEKWOOD SUBDIVISION CONSTRUCTION HEALTH RISK AND GREENHOUSE GAS ASSESSMENT

Petaluma, California

January 24, 2022
Revised: July 11, 2022

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Introduction

The purpose of this report is to address the potential community risk impacts associated with the construction of the proposed Creekwood Subdivision located at 270 and 280 Casa Grande Road in Petaluma, California. The air quality impacts from this project would be associated with construction of the new buildings. Air pollutant emissions associated with construction of the project were predicted using appropriate computer models. In addition, the potential project construction health risk impacts and the impact of existing toxic air contaminant (TAC) sources affecting the nearby and proposed sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1] BAAQMD recommends using a 1,000-foot screening radius around the project site for purposes of identifying community health risk from existing sources of TACs.

Project Description

The project site is comprised of two parcels, 270 Casa Grande Road and 280 Casa Grande Road, that contain one single-family home. The project proposes to demolish the existing home to construct 35 single-family homes and 24 townhomes. Construction is proposed to begin in January 2023 and be completed by July 2024.

Setting

The project is located in Sonoma County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

[1] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

Regulatory Setting

Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards. California also has the ability to set motor vehicle emission standards and standards for fuel used in California, as long as they are the same or more stringent than the federal standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_X and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[2]

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The new standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel

[2] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

(from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel (ULSD), is currently required for use by all vehicles in the U.S.

All of the above federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.[3] In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO_X.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County,

[3] California Air Resources Board, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County, and southern Sonoma County.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[4] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall CalEnviroScreen score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[5] The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco. The project site is not within a CARE area and not within a BAAQMD overburdened area as identified by CalEnviroScreen.

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[6] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. *Attachment 1* includes detailed community risk modeling methodology.

[4] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program , accessed 2/18/2021.
[5] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en , accessed 10/1/2021.
[6] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.

City of Petaluma General Plan 2025

The City of Petaluma General Plan 2025[7] includes policies and programs to reduce exposure of the City's sensitive population to exposure of air pollution and TACs. The following policies and programs are applicable to the proposed project:

4-P-15 Improve air quality by reducing emissions from stationary point sources of air pollution (e.g. equipment at commercial and industrial facilities) and stationary area sources (e.g. wood-burning fireplaces & gas powered lawn mowers) which cumulatively emit large quantities of emissions.

A. Continue to work with the Bay Area Air Quality Management District to achieve emissions reductions for non-attainment pollutants; including carbon monoxide, ozone, and PM10, by implementation of air pollution control measures as required by State and federal statutes. The BAAQMD's CEQA Guidelines should be used as the foundation for the City's review of air quality impacts under CEQA.

B. Continue to use Petaluma's development review process and the CEQA regulations to evaluate and mitigate the local and cumulative effects of new development on air quality.

C. Continue to require development projects to abide by the standard construction dust abatement measures included in BAAQMD's CEQA Guidelines. These measures would reduce exhaust and particulate emissions from construction and grading activities.

D. Reduce emissions from residential and commercial uses by requiring the following:
   - Use of high efficiency heating and other appliances, such as cooking equipment, refrigerators, and furnaces, and low NOx water heaters in new and existing residential units;
   - Compliance with or exceed requirements of CCR Title 24 for new residential and commercial buildings;
   - Incorporation of passive solar building design and landscaping conducive to passive solar energy use for both residential and commercial uses, i.e., building orientation in a south to southeast direction, encourage planting of deciduous trees on west sides of structures, landscaping with drought resistant species, and use of groundcovers rather than pavement to reduce heat reflection;
   - Encourage the use of battery-powered, electric, or other similar equipment that does not impact local air quality for nonresidential maintenance activities;
   - Provide natural gas hookups to fireplaces or require residential use of EPA-certified wood stoves, pellet stoves, or fireplace inserts. Current building code standards generally ban the installation of open-hearth, wood burning fireplaces and wood stoves in new construction. It does, however, allow for the use of low-polluting

[7] City of Petaluma, City of *Petaluma: General Plan 2025*, May 2008. Web: https://cityofpetaluma.org/documents/general-plan/

wood stoves and inserts in fireplaces approved by the federal Environmental Protection Agency, as well as fireplaces fueled by natural gas.

4-P-16 To reduce combustion emissions during construction and demolition phases, the contractor of future individual projects shall encourage the inclusion in construction contracts of the following requirements or measures shown to be equally effective:

- Maintain construction equipment engines in good condition and in proper tune per manufacturer's specification for the duration of construction;
- Minimize idling time of construction related equipment, including heavy-duty equipment, motor vehicles, and portable equipment;
- Use alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline);
- Use add-on control devices such as diesel oxidation catalysts or particulate filters;
- Use diesel equipment that meets the ARB's 2000 or newer certification standard for off-road heavy-duty diesel engines;
- Phase construction of the project;
- Limit the hours of operation of heavy-duty equipment.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are in the single-family residences to the south of the project site, and the multi-family residences to the north of the project site. The multi-family residences north of the project site are senior care apartments. However, for this project, it is assumed that infants and children are present there to provide the most conservative estimate of health risks. Casa Grande High School and Sonoma Mountain High School are also near the project site. This project would introduce new sensitive receptors (i.e., residents) to the area.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 CEQA Air Quality Guidelines. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the CEQA Air Quality Guidelines in 2017 to include the latest significance thresholds, which were used in this analysis and are summarized in Table 1. Impacts above these thresholds are considered potentially significant.

Table 1. BAAQMD CEQA Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO (local)	None	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust (PM_{10} and $PM_{2.5}$)	Construction Dust Ordinance or other Best Management Practices	None	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence***	**Combined Sources (Cumulative from all sources within 1,000-foot zone of influence)**	
Excess Cancer Risk	10 per one million	100 per one million	
Hazard Index	1.0	10.0	
Incremental annual $PM_{2.5}$	0.3 µg/m^3	0.8 µg/m^3	
Greenhouse Gas Emissions			
Land Use Projects – direct and indirect emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons annually or 4.6 metric tons per capita (for 2020)		

Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.

*Zone of influence is measured from the property line of a source or receptor.

Construction Community Risk Impacts and Mitigation Measures

Project impacts related to increased community risk can occur either by generating emissions of TACs and air pollutants and by introducing a new sensitive receptor in proximity to an existing source of TACs. Temporary project construction activity would generate emissions of DPM from equipment and trucks and also generate dust on a temporary basis that could affect nearby sensitive receptors. A construction community health risk assessment was prepared to address project construction impacts on the surrounding off-site sensitive receptors.

Additionally, the project could introduce new residents that are sensitive receptors, who would be exposed to existing sources of TACs and localized air pollutants in the vicinity of the project. However, no existing sources of TACs were located within 1,000 feet of the project site. Therefore, the impact of the existing sources of TAC upon the existing sensitive receptors and new incoming sensitive receptors was not assessed.

Community risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations, and computing the Hazard Index (HI) for non-cancer health risks. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust emissions pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[8] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated. The methodology for computing community risks impacts is contained in *Attachment 1*.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CARB EMission FACtors 2021 (EMFAC2021) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[9] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2021 vehicle emissions modeling outputs are included in *Attachment 3*.

CalEEMod Modeling

Land Use Inputs

The proposed project land uses were entered into CalEEMod as described in Table 2.

[8] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[9] See CARB's EMFAC2021 Emissions Inventory at https://arb.ca.gov/emfac/emissions-inventory.

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Single Family Housing	35	Dwelling Unit	51,275	4.5
Condo/Townhouse	24	Dwelling Unit	35,160	
Other Asphalt Surfaces[1]	0.75	Acre	32,670	

[1]Other Asphalt Surfaces include common parking spaces and roadway/driveways.

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario for both phases, including equipment list and schedule, were based on information provided by the project applicant.

The construction equipment worksheets provided by the applicant included the schedule for each phase. Within each phase, the quantity of equipment to be used was provided by the applicant. The average hours per day and total number of workdays was set to the default values in CalEEMod. Where CalEEMod does not provide default values, conservative values were estimated for equipment required and hours operated. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be January 2023 and would be built out over a period of approximately 19 months, or 400 construction workdays. The earliest year of full operation was assumed to be 2025.

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of soil material imported and/or exported to the site and the estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition and grading were estimated from the anticipated grading volumes by assuming each truck could carry 10 tons per load. The number of concrete and asphalt total round haul trips were estimated for the project and converted to total one-way trips, assuming two trips per delivery.

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2017 motor vehicle emission factor model. This model has been superseded by the EMFAC2021 model; however, CalEEMod has not been updated to include EMFAC2021. Therefore, the construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. EMFAC2021 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light

duty trucks (EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (soil import/export). Since CalEEMod does not address cement trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On road emissions in Sonoma County for 2023-2024 was used in these calculations. Table 3 provides the traffic inputs that were combined with the EMFAC2021 emission database to compute vehicle emissions.

Table 3. Construction Traffic Data Used for EMFAC2021 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker[1]	Total Vendor[1]	Total Haul[2]	
Vehicle mix[1]	50% LDA 25% LDT1 25% LDT2	50% MHDT 50% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0	CalEEMod default distance with 5-min truck idle time.
Demolition	80	-	10	2,200-sf building demo. CalEEMod default worker trips.
Site Preparation	200	-	-	CalEEMod default worker trips.
Grading[3]	400	-	-	CalEEMod default worker trips.
Trenching	295	-	-	CalEEMod default worker trips.
Building Construction	13,200	3,600	768	Est 86,500-sf concrete. CalEEMod default worker and vendor trips.
Architectural Coating	180	-	-	CalEEMod default worker trips.
Paving	360	-	77	Est. 32,670 asphalt. CalEEMod default worker trips.

Notes: [1] Based on 2023-2024 EMFAC2021 light-duty vehicle fleet mix for Sonoma County.
[2] Includes demolition trips estimated by CalEEMod based on amount of material to be removed. Cement and asphalt trips estimated based on project size and land uses.
[3] No substantial soil import/export expected at the time of this analysis.

Summary of Computed Construction Period Emissions

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions and dividing those emissions by the number of active workdays during that year. Table 4 shows the annualized average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 4, predicted annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

Table 4. Construction Period Emissions

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
2023	0.13	1.20	0.06	0.05
2024	0.66	0.35	0.02	0.01
Average Daily Construction Emissions Per Year (pounds/day)				
2023 (261 construction workdays)	0.98	9.19	0.43	0.38
2024 (139 construction workdays)	9.46	5.10	0.26	0.21
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *Mitigation Measure AQ-1 would implement BAAQMD-recommended best management practices.*

Mitigation Measure AQ-1: **Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne

toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

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

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Mitigation Measure AQ-1

The measures above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines. With the *BAAQMD-recommended best management practices* implemented by *Mitigation Measure AQ-1*, the impacts from fugitive PM_{10} and $PM_{2.5}$ dust would be *less-than-significant*.

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by residents. Evaporative ROG emissions from architectural coatings and maintenance products (classified as consumer products) are associated with these types of projects. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

<u>CalEEMod Inputs</u>

Land Uses

The project land uses were input to CalEEMod as described above for the construction period modeling.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest year of full operation would be 2025 if construction begins in 2023. Emissions associated with build-out later than 2025 would be lower.

Traffic Information

CalEEMod allows the user to enter specific vehicle trip generation rates. CalEEMod default trip

rates were used for this project, which are the same as those used in the Project traffic study.[10] The default trip lengths and trip types specified by CalEEMod were used.

EMFAC2021 Adjustment

The vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2017, which is an older CARB emission inventory for on road and off-road mobile sources. Since the release of CalEEMod Version 2020.4.0, new emission factors have been produced by CARB. EMFAC2021 became available for use in January 2021. It includes the latest data on California's car and truck fleets and travel activity. The CalEEMod default vehicle emission factors and fleet mix were updated using the emission rates and fleet mix from EMFAC2021. On road emission rates from 2025 Sonoma County were used (See *Attachment 3*). More details about the updates in emissions calculation methodologies and data are available in the EMFAC2021 Technical Support Document.[11]

Energy

CalEEMod defaults for energy use were used, which include the 2019 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. The electricity produced emission rate was modified in CalEEMod. CalEEMod has a default emission factor of 120 pounds of CO_2 per megawatt of electricity produced, which is based on Sonoma Clean Power's 2019 emissions rate.

Other Inputs

Default model assumptions for emissions associated with solid waste generation use were applied to the project. Water/wastewater use were changed to 100% aerobic conditions to represent wastewater treatment plant conditions. Further, it was assumed that no hearths or fireplaces would be installed as part of the project per BAAQMD Regulation 6, Rule 3, which requires that new building construction not install a wood-burning device (effective as of November 1, 2016). Since Petaluma has passed a reach code banning natural gas in new residential buildings and requires solar panels with battery storage that fully offset electricity usage for each dwelling unit,[12] all Title 24 and Non-Title 24 natural gas intensity was changed to zero.

Existing Uses

The existing land uses on the project site include one, 2,200 square foot single family home. Given the minimal emissions use of the existing site, a CalEEMod run was not developed to compute emissions from the use of the existing land.

Summary of Computed Operational Period Emissions

[10] W-Trans. 2021. *Focused Traffic Study for the Creekwood Residential Development*. November 10.
[11] See CARB 2021: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac
[12] https://cityofpetaluma.org/all-electric-building-rules/#:~:text=The%20City%20of%20Petaluma%20is,our%20community's%20greenhouse%20gas%20emissions.

Annual emissions were predicted using CalEEMod. The daily emissions were estimated assuming 365 days of operation. Table 5 shows average daily emissions of ROG, NO_X, total PM_{10}, and total $PM_{2.5}$ during operation of the project. The operational period emissions would not exceed the BAAQMD significance thresholds.

Table 5. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2025 Project Operational Emissions (*tons/year*)	0.83	0.35	0.40	0.11
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Thresholds?	No	No	No	No
2025 Project Operational Emissions (*lbs./day*)[1]	4.55	1.92	2.19	0.58
BAAQMD Thresholds (lbs./day)	*54 lbs.*	*54 lbs.*	*82 lbs.*	*54 lbs.*
Exceed Threshold?	No	No	No	No

Notes: [1] Assumes 365-day operation.

Community Health Risk from Project Construction

Construction Emissions

The CalEEMod model and EMFAC2021 emissions provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages as 0.07 tons (132 pounds). The on-road emissions are a result of haul truck travel during grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.11 tons (212 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[13] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

Combustion equipment DPM exhaust emissions were modeled as a series of point sources with a nine-foot release height (construction equipment exhaust stack height) placed at 23 feet (7 meter) intervals throughout the construction site. This resulted in 373 individual point sources being used to represent mobile equipment DPM exhaust emissions in the respective construction area, with

[13] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

DPM emissions occurring throughout the project construction site. In addition, the following stack parameters were used: a vertical release, a stack diameter of 2.5 inches, an exhaust temperature of 918˚F, and an exit velocity of 309 feet per second. Since these are point sources plume rise is calculated by the AERMOD dispersion model. Emissions from vehicle travel on- and off-site were also distributed among the point sources throughout the site. The locations of the point sources used for the modeling are identified in Figure 1.

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources.

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data prepared by Lakes Environmental for modeling in the City of Petaluma for use with the AERMOD. Construction emissions were modeled as occurring daily between 8:00 a.m. to 5:00 p.m., when the majority of construction activity is expected to occur. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2023-2024 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) were used to represent the breathing height on the first and second floor of nearby single and multi-family residences.[14] A receptor height of 5 feet (1.5 meter) was used to represent the breathing height of children at the high schools.

Summary of Construction Community Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the Office of Environmental Health Hazard Assessment (OEHHA) guidance for age sensitivity factors and exposure parameters as recommended by BAAQMD (see *Attachment 1)*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Infant, child, and adult exposures were assumed to occur at all residences during the entire construction period. The child (ages 2 through 16 years old) cancer risk parameters were used to calculate the increased cancer risk for the high school students.

[14] Bay Area Air Quality Management District, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0. May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI value was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation refence exposure level of 5 $\mu g/m^3$.

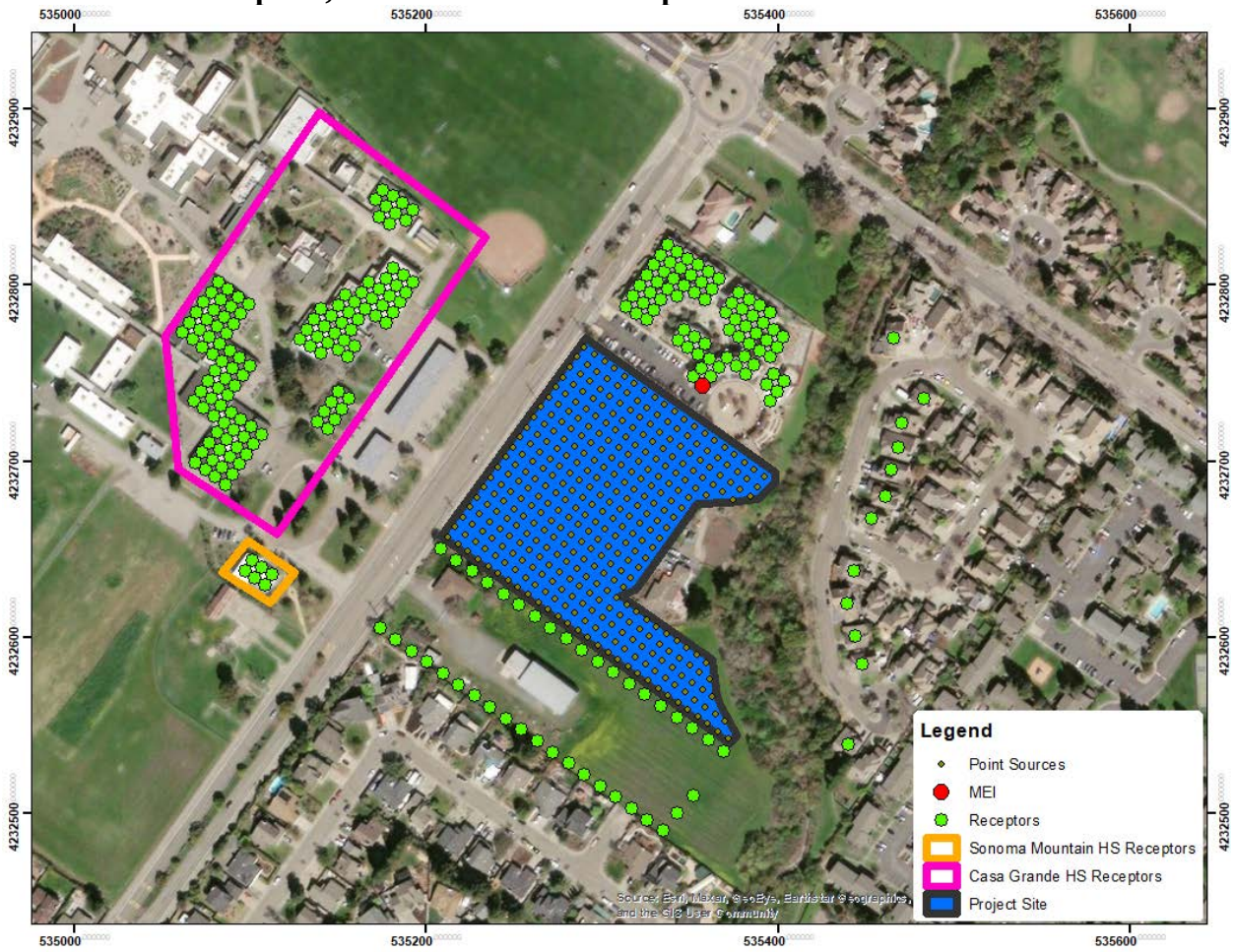
The maximum-modeled annual DPM and $PM_{2.5}$ concentrations, which includes both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEI). Results of this assessment indicated that the construction residential MEI was located at the adjacent multi-family home north of the construction project site. Table 6 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the construction MEI. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum $PM_{2.5}$ concentrations associated with construction activities at the nearby high schools. The maximum increased cancer risks were adjusted using child exposure parameters. The uncontrolled cancer risk, $PM_{2.5}$ concentration, and HI at the nearby school would not exceed their respective BAAQMD single-source significance thresholds, as shown in Table 6.

Table 6. Construction Risk Impacts at the Off-site MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impact				
Project Construction	Unmitigated	5.97 (infant)	0.19	0.01
	BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
Most Impacted High School – Casa Grande High School				
Project Construction	Unmitigated	0.58 (child)	0.03	<0.01
	BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

Figure 1. Locations of Project Construction Site, DPM Point Sources, Off-Site Sensitive Receptors, and Maximum TAC Impact



Cumulative Community Risks of all TAC Sources at the Offsite Project MEI

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site (i.e., influence area). These sources include rail lines, highways, busy surface streets, and stationary sources identified by BAAQMD.

A review of the project area and based on provided traffic information indicated that no roadways within the influence area would have traffic exceeding 10,000 vehicles per day. Per BAAQMD recommended risks and methodology, a road with less than 10,000 total vehicle per day is considered a low-impact source of TACs and do not need to be considered in the CEQA analysis.[15] A review of BAAQMD's stationary source geographic information systems (GIS) map tool identified no stationary sources with the potential to affect the project site and MEI. Figure 2 shows

[15] Bay Area Air Quality Management District, 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

the project area included within the influence area and the location of the MEI. Details of the modeling and community risk calculations are included in *Attachment 5*.

Figure 2. Project Site and Nearby TAC and $PM_{2.5}$ Sources

BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2018* GIS website.[16] This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts. No sources within the project's 1,000-foot influence area were identified using this tool.

Summary of Cumulative Health Risk Impact at Construction MEI

Table 7 reports both the project and cumulative community risk impacts at the sensitive receptors most affected by construction (i.e. the MEI). The project would not have an exceedance with respect to community risk caused by project construction activities, since the maximum

[16] BAAQMD, Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

unmitigated cancer risk and annual $PM_{2.5}$ concentration do not exceed the BAAQMD single-source thresholds.

Table 7. Impacts from Combined Sources at Project MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	5.97 (infant)	0.19	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

On-Site Community Health Risk Impacts – New Project Residents

A health risk assessment would have been completed to assess the impact existing TAC sources would have on the new proposed sensitive receptors (residents) that that project would introduce. However, there are no existing TAC sources (i.e., roadways with over 10,000 daily vehicles or BAAQMD stationary sources) within 1,000 feet of the project site. Therefore, an on-site community health risk impact was not conducted.

GREENHOUSE GAS EMISSIONS

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2, CH_4, and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2018, total gross nationwide GHG emissions were 6,676.6 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[17] These emissions were lower than peak levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission

[17] United States Environmental Protection Agency, 2020. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018*. April. Web: https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf

inventory on an annual basis where the latest inventory includes 2000 through 2017 emissions.[18] In 2017, GHG emissions from statewide emitting activities were 424 MMT. The 2017 emissions have decreased by 14 percent since peak levels in 2004 and are 7 MMT below the 1990 emissions level and the State's 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.1 MT per person to 10.7 MT per person in 2017. The most recent Bay Area emission inventory was computed for the year 2011.[19] The Bay Area GHG emission were 87 MMT. As a point of comparison, statewide emissions were about 444 MMT in 2011

Recent Regulatory Actions for GHG Emissions

Executive Order S-3-05 – California GHG Reduction Targets

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

Assembly Bill 32 – California Global Warming Solutions Act (2006)

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05, which has a target of reducing GHG emissions 80 percent below 1990 levels.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons (MMT) of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction

[18] CARB. 2019. *2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017*. Web: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf

[19] BAAQMD. 2015. *Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011*. January. Web: http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf accessed Nov. 26, 2019.

measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

Executive Order B-30-15 & Senate Bill 32 GHG Reduction Targets – 2030 GHG Reduction Target

In April 2015, Governor Brown signed EO B-30-15, which extended the goals of AB 32, setting a greenhouse gas emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed Senate Bill (SB) 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*. [20] While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB is currently working on a second update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The proposed Scoping Plan Update was published on January 20, 2017 as directed by SB 32 companion legislation AB 197. The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and obtain the statewide goals.

The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target (note that the AB 32 Scoping Plan only addressed 2020 targets and a long-term goal). Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit-oriented housing;
- Develop walkable and bikeable communities;
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

[20] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

In the updated Scoping Plan, CARB recommends statewide targets of no more than 6 metric tons (MT) CO_2e per capita (statewide) by 2030 and no more than 2 metric tons CO_2e per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.

Executive Order B-55-18 – Carbon Neutrality

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant state agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal.

Senate Bill 375 – California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g. Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

Senate Bill 350 - Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Senate Bill 100 – Current Renewable Portfolio Standards

In September 2018, SB 100 was signed by Governor Brown to revise California's RPS program goals, furthering California's focus on using renewable energy and carbon-free power sources for its energy needs. The bill would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retails sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2017 the target would be 52 percent, and

by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

California Building Standards Code – Title 24 Part 11 & Part 6

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[21] The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2019 California Building Standard Code) was effective as of January 1, 2020.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2019 Energy Code) replaced the 2016 Energy Code as of January 1, 2020. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.[22]

CEC studies have identified the most aggressive electrification scenario as putting the building sector on track to reach the carbon neutrality goal by 2045.[23] Installing new natural gas infrastructure in new buildings will interfere with this goal. To meet the State's goal, communities have been adopting "Reach" codes that prohibit natural gas connections in new and remodeled buildings.

Requirements for electric vehicle (EV) charging infrastructure are set forth in Title 24 of the California Code of Regulations and are regularly updated on a 3-year cycle. The CALGreen standards consist of a set of mandatory standards required for new development, as well as two more voluntary standards known as Tier 1 and Tier 2. The CalGreen standards have recently been updated (2022 version) to require deployment of additional EV chargers in various building types, including multifamily residential and nonresidential land uses. They include requirements for both EV capable parking spaces and the installation of Level 2 EV supply equipment for multifamily residential and nonresidential buildings. The 2022 CALGreen standards include requirements for both EV readiness and the actual installation of EV chargers. The 2022 CALGreen standards include both mandatory requirements and more aggressive voluntary Tier 1 and Tier 2 provisions. Providing EV charging infrastructure that meets current CALGreen requirements will not be

[21] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.
[22] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf
[23] California Energy Commission. 2021. F*inal Commission Report: California Building Decarbonization Assessment. Publication Number CEC-400-2021-006-CMF*.August

sufficient to power the anticipated more extensive level of EV penetration in the future that is needed to meet SB 30 climate goals.

SB 743 Transportation Impacts

Senate Bill 743 required lead agencies to abandon the old "level of service" metric for evaluating a project's transportation impacts, which was based solely on the amount of delay experienced by motor vehicles. In response, the Governor's Office of Planning and Research (OPR) developed a VMT metric that considered other factors such as reducing GHG emissions and developing multimodal transportation[24]. A VMT-per-capita metric was adopted into the CEQA Guidelines Section 15064.3 in November 2017. Given current baseline per-capita VMT levels computed by CARB in the 2030 Scoping Plan of 22.24 miles per day for light-duty vehicles and 24.61 miles per day for all vehicle types, the reductions needed to achieve the 2050 climate goal are 16.8 percent for light-duty vehicles and 14.3 percent for all vehicle types combined. *Based on this analysis (as well as other factors), OPR recommended using a 15-percent reduction in per capita VMT as an appropriate threshold of significance for evaluating transportation impacts.*

Petaluma Vehicle Miles Traveled CEQA Threshold

The City of Petaluma identifies VMT significance criteria in the *Senate Bill 743 Vehicle Miles Traveled Implementation Guidelines*[25], dated July 2021, indicating that a significant traffic VMT impact may occur at residential developments if a project's total home-based VMT per resident exceeds 16.8 percent below the citywide average. The current Citywide home-based VMT per capita is 19.3 miles, which translates to a significance threshold of 16.1 VMT per capita.

City of Petaluma General Plan 2025

The City of Petaluma General Plan 2025 includes policies and programs to reduce exposure of the City's sensitive population to exposure of air pollution, TACs, and GHG emissions. The following policies and programs are applicable to the proposed project:

4-P-15 Improve air quality by reducing emissions from stationary point sources of air pollution (e.g. equipment at commercial and industrial facilities) and stationary area sources (e.g. wood-burning fireplaces & gas powered lawn mowers) which cumulatively emit large quantities of emissions.

D. Continue to work with the Bay Area Air Quality Management District to achieve emissions reductions for non-attainment pollutants; including carbon monoxide, ozone, and PM10, by implementation of air pollution control measures as required by State and federal statutes. The BAAQMD's CEQA Guidelines should be used as the foundation for the City's review of air quality impacts under CEQA.

[24] Governor's Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December.
[25] Fehr & Peers. 2021. *Senate Bill 743 Vehicle Miles Traveled Implementation Guidelines.* July. See: https://cityofpetaluma.org/documents/vmt-tac-staff-report-and-attachments-8-3-21/

E. Continue to use Petaluma's development review process and the CEQA regulations to evaluate and mitigate the local and cumulative effects of new development on air quality.

F. Continue to require development projects to abide by the standard construction dust abatement measures included in BAAQMD's CEQA Guidelines. These measures would reduce exhaust and particulate emissions from construction and grading activities.

D. Reduce emissions from residential and commercial uses by requiring the following:

- Use of high efficiency heating and other appliances, such as cooking equipment, refrigerators, and furnaces, and low NOx water heaters in new and existing residential units;
- Compliance with or exceed requirements of CCR Title 24 for new residential and commercial buildings;
- Incorporation of passive solar building design and landscaping conducive to passive solar energy use for both residential and commercial uses, i.e., building orientation in a south to southeast direction, encourage planting of deciduous trees on west sides of structures, landscaping with drought resistant species, and use of groundcovers rather than pavement to reduce heat reflection;
- Encourage the use of battery-powered, electric, or other similar equipment that does not impact local air quality for nonresidential maintenance activities;
- Provide natural gas hookups to fireplaces or require residential use of EPA-certified wood stoves, pellet stoves, or fireplace inserts. Current building code standards generally ban the installation of open-hearth, wood burning fireplaces and wood stoves in new construction. It does, however, allow for the use of low-polluting wood stoves and inserts in fireplaces approved by the federal Environmental Protection Agency, as well as fireplaces fueled by natural gas.

4-P-24 Comply with AB 32 and its governing regulations to the full extent of the City's jurisdictional authority.

4-P-25 To the full extent of the City's jurisdictional authority, implement any additional adopted State legislative or regulatory standards, policies and practices designed to reduce greenhouse gas emissions, as those measures are developed.

4-P-26 Implement all measures identified in the municipal Climate Action Plan to meet the municipal target set in Resolution 2005-118 (20% below 2000 levels by 2010).

4-P-30 Continue to monitor new technology and innovative sustainable design practices for applicability to ensure future development minimizes or eliminates the use of fossil fuel and GHG-emitting energy consumption.

City of Petaluma Greenhouse Gas Emissions Reduction Action Plan

The City of Petaluma's Greenhouse Gas Emissions Reduction Action Plan addresses emissions from municipal government activities and sources per Resolution 2002-117. The purpose of the plan is to identify and prioritize programs, projects, and procedural policies that will help the City government achieve the municipal GHG emission goals of Resolution 2005-118 by more than 20 percent below 2000 levels by 2015. The plan does not apply to land development projects.

The Sonoma County Regional Climate Action Plan, developed in 2016, includes 2020 GHG emission reduction measures for Petaluma.[26] This plan is an advisory document that the City uses to assist in achieving reduction of GHG emissions. Development projects within the City of Petaluma are encouraged to comply with the intent of the Climate Action Plan and realize GHG reductions through voluntary application of reduction measures. The reduction measures are categorized by goals for State and Regional Measures and then by Local Measures. Under a Business as Usual scenario, emissions in Petaluma would be 542,970 metric tons (MT) in 2020. State measures (e.g., vehicle reduction, cap and trade, renewable portfolios) would reduce these emissions by 119,660 MT. Regional measures are anticipated to reduce emissions by another 28,200 MT and Local Measures would reduce emissions by 18,490 MT. Under this plan, Petaluma's GHG emissions would be reduced to 376,620 MT in 2020. These emissions would be 31 percent below business as usual projection and below estimated 1990 emission of 387,020 MT.

Petaluma Climate Action Framework

Adopted on August 5, 2019, the City of Petaluma's Climate Action Framework outlines the principles that guide the City's ongoing response to and discussion about the climate crisis. Based on four sections, the framework will guide the City as it works to avoid catastrophic climate change and adapt to its expected impacts. The Framework is the foundation for engagement and further input, but none of the actions proposed commit the City to a specific action nor does anything in the Framework amend any existing City legislation or regulation.

The following goals and action items from the City of Petaluma's Climate Action Framework are applicable to this project:

Mitigation and Sequestration Goals

- Develop a Climate Action Plan outlining the actions the City will take to achieve its climate goals.
- Eliminate emissions from the building sector through zero-emissions new construction (emissions embedded in materials and those emitted during construction and operation), building retrofits, appliance replacements, and use of renewable generated clean electricity.
- Reduce consumption emissions to the level necessary to meet our overall climate goals.

[26] Sonoma County Regional Climate Protection Authority. 2016. *Climate Action 2020 and Beyond*. July.

Mitigation and Sequestration Action Items

- Mandate all-electric new construction to eliminate fossil fuel use in new buildings.
- Require all new construction, additions, and major rehab projects to use low-embodied carbon materials, starting with concrete.

BAAQMD GHG Significance Thresholds

The BAAQMD's 2017 CEQA Air Quality Guidelines do not use quantified thresholds for projects that are in a jurisdiction with a qualified GHG reductions plan (i.e., a Climate Action Plan). The plan has to address emissions associated with the period that the project would operate (e.g., beyond year 2020). For quantified emissions, the guidelines recommended a GHG threshold of 1,100 metric tons or 4.6 metric tons (MT) per capita. These thresholds were developed based on meeting the 2020 GHG targets set in the scoping plan that addressed AB 32. Development of the project would occur beyond 2020, so a threshold that addresses a future target is appropriate.

Although BAAQMD had not published a quantified threshold for 2030, this assessment used a bright-line emission threshold of 660 MT CO_{2e}/year based on the GHG reduction goals of EO B-30-15. The 2030 bright-line threshold is a 40 percent reduction of the 2020 1,100 MT CO_{2e}/year threshold. Evidence published by the State indicates the AB 32 goal of reducing statewide GHG emissions to 1990 levels was met prior to 2020. Current State plans are to further reduce emissions to 40% below 1990 levels by 2030. Assuming statewide emissions are at 1990 levels or lower in 2020, it would be logical to reduce the BAAQMD-recommended threshold for meeting the AB 32 threshold by 40% to develop a threshold for 2030.

The original GHG analysis for this project was prepared in January 2022. On April 20, 2022, BAAQMD adopted new thresholds of significance for operational GHG emissions from land use projects for projects beginning the CEQA process. The following framework is how BAAQMD will determine GHG significance moving forward.[27] Note BAAQMD intends that the thresholds apply to projects that begin the CEQA process after adoption of the thresholds, unless otherwise directed by the lead agency. The air quality and GHG assessment was originally completed prior to adoption of these thresholds.

A. Projects must include, at a minimum, the following project design elements:
   a. Buildings
      i. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).
      ii. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
   b. Transportation

[27] Justification Report: BAAQMD CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Project and Plans. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

i. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
    1. Residential Projects: 15 percent (16.8 percent in Petaluma) below the existing VMT per capita
    2. Office Projects: 15 percent (16.8 percent in Petaluma) below the existing VMT per employee
    3. Retail Projects: no net increase in existing VMT
ii. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Any new land use project would have to include either section A or B from the above list, not both, to be considered in compliance for GHG emissions from project operation. The City of Petaluma has not adopted a GHG reduction strategy that meets the CEQA; therefore, the thresholds for A above would only apply.

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Project GHG Emissions – Analysis Prior to April 2022

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines and the City's Climate Action Plan.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above within the operational period emissions. Note that existing emissions from the one single-family home on the site were not considered in this analysis. CalEEMod output is included in *Attachment 2*.

Service Population Emissions

The project service population is based on the number of residents. Based on the U.S. Census rate for Petaluma of 2.65 persons per household, the service population for this project is expected to be 156 residents.[28]

Construction GHG Emissions

GHG emissions associated with construction were computed at 360 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable.

Operational GHG Emissions

The CalEEMod model was used to estimate daily emissions associated with operation of the fully-developed site under the proposed project. As shown in Table 8, net annual GHG emissions resulting from operation of the proposed project are predicted to be 497 metric tons (MT) of CO_2e in 2025 and 450 MT of CO_2e in 2030. The service population emission for the year 2025 and 2030 are predicted to be 3.2 and 2.9 MT/CO_{2e}/year/service population, respectively.

To be considered an exceedance, the project must exceed both the GHG significance threshold in metric tons per year and the service population significance threshold in the future year of 2030. The project would not exceed the annual emissions bright-line threshold of 660 MT CO_2e/year in 2030. Therefore, the project would not exceed the GHG emission thresholds.

Table 8. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project in 2025	Proposed Project in 2030
Area	0.73	0.73
Energy Consumption	21.61	21.61
Mobile	443.58	396.63
Solid Waste Generation	26.67	26.67
Water Usage	3.98	3.98
Project Total	496.58	449.63
Significance Threshold		***660 MT CO_2e/year***
Service Population Emissions (MT CO_{2e}/year/service population	3.18	**2.88**
Significance Threshold		***2.8 in 2030***
Exceeds both thresholds?		*No*

[28] US Census: https://www.census.gov/quickfacts/petalumacitycalifornia

GHG Analysis Using BAAQMD April 2022 Thresholds

Unlike the previous GHG thresholds, BAAQMD did not identify screening sizes or emissions levels that indicate a project would have de minimus effects.

Proposed residential buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures, water-efficient irrigation systems, and compliance with current energy efficacy standards. The Project is evaluated against each of the new BAAQMD GHG thresholds that apply to projects:

1. Avoid construction of new natural gas connections for residential and office buildings,
   Conforms – compliance with City Reach Code would prohibit natural gas infrastructure in new buildings.

2. Avoid wasteful or inefficient use of electricity,
   Conforms – the Project would meet CALGreen Building Standards Code requirements that are considered to be energy efficient.

3. Include electric vehicle charging infrastructure that meets current Building Code CALGreen Tier 2 compliance, and
   Conforms – The Project would include electric vehicle charging infrastructure that meets or exceeds current Building Code CALGreen Tier 2 compliance.

4. Reduce VMT per capita by 15 percent over baseline conditions.
   Does not Conform – While the project is implementing all reasonable and feasible measure to reduce VMT, the per capita VMT would exceed the threshold.

   VMT thresholds and impacts are described in the Focused Traffic Study prepared by W-Trans[29]. The City's transportation policies identified the Citywide baseline VMT rate as 19.3 miles per capita for residential home-based travel. The VMT threshold of 16.8 percent below baseline is 16.1 miles per capita. Based on data from the Sonoma County Transportation Authority (SCTA) travel demand model, the Creekwood project site is located within traffic analysis zone (TAZ) 341, which has a baseline VMT per capita of 20.2 miles. For the project to achieve the VMT significance threshold of 16.1 miles per capita, its VMT would need to be 20.3 percent lower than the current average for the TAZ in which the site is located. The impact is primarily based on the location of the project rather than the type of project.

   Project measures to reduce VMT include residential density adjustments, inclusion of affordable housing, pedestrian and bicycle network improvements, and construction of a new pedestrian-bicycle bridge over Adobe Creek. This bridge would connect to the Adobe Creek path on the south side of the creek. This would result in a reduction of VMT from the project as well as existing and future non-project users. The Project would achieve a 16 percent reduction in VMT; however, this would not reduce the Project VMT by 20.3 percent that is needed to meet the City's threshold.

[29] W-Trans. 2021. *Focused Traffic Study for the Creekwood Residential Development*. November 10.

While the project would achieve or exceed achieving 3 of the 4 thresholds identified by BAAQMD for GHG, it would not meet the VMT-based threshold. While the project may reduce GHG emissions indirectly in other ways (e.g., generation of solar power, exceeding the number of EV chargers required, construction of a pedestrian path that would reduce travel by non-project users), the VMT impact would be considered significant and unavoidable. BAAQMD does not prescribe methods to offset GHG emissions from VMT increases with other Project attributes that reduce emissions.

Supporting Documentation

Attachment 1 is the methodology used to compute community risk impacts, including the methods to compute lifetime cancer risk from exposure to project emissions.

Attachment 2 includes the CalEEMod output for project construction emissions. Also included are any modeling assumptions.

Attachment 3 includes the EMFAC2021 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

Attachment 4 is the construction health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format

Attachment 5 includes the cumulative community risk calculations, modeling results, and health risk calculations from sources affecting the construction MEI and project site receptors.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[30] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[31] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[32] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs is calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of

[30] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[31] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[32] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR^* \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

Parameter	***Exposure Type*** →	**Infant**		**Child**	**Adult**
	Age Range →	**3rd Trimester**	**0<2**	**2 < 16**	**16 - 30**
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*
* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.					

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Modeling Inputs and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: Creekwood SB330 - Petaluma

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size 59 Dwelling Units 4.5 total project acres disturbed

_____ s.f. residential

_____ s.f. retail

_____ s.f. office/commercial

0.75 acre paved roadways

_____ s.f. parking garage _____ spaces

_____ s.f. parking lot _____ spaces

Construction Hours am to pm

Pile Driving? Y/N?

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION? Y/N? ____

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Demolition	**Start Date:**	**1/1/2023**	**Total phase:**	**10**			**Overall Import/Export Volumes**
		End Date:	**1/13/2023**					
1	Concrete/Industrial Saws	81	0.73	8		0	0	**Demolition Volume**
1	Excavators	158	0.38	8		0	0	Square footage of buildings to be demolished
1	Rubber-Tired Dozers	247	0.4	8		0	0	(*or* total tons to be hauled)
	Tractors/Loaders/Backhoes	97	0.37			0	0	**2200** square feet *or*
	Other Equipment?							**?** Hauling volume (tons)
								Any pavement demolished and hauled? **? tons**
	Site Preparation	**Start Date:**	**1/14/2023**	**Total phase:**	**10**			
		End Date:	**1/27/2023**					
3	Graders	187	0.41	8		0	0	
4	Rubber Tired Dozers	247	0.4	8		0	0	
1	Tractors/Loaders/Backhoes	97	0.37	8		0	0	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**1/28/2023**	**Total phase:**	**20**			
		End Date:	**2/24/2023**					**Soil Hauling Volume**
2	Excavators	158	0.38	8		0	0	Export volume = **?** cubic yards?
1	Graders	187	0.41	8		0	0	Import volume = **?** cubic yards?
1	Rubber Tired Dozers	247	0.4	8		0	0	
2	Scrapers	367	0.48	8		0	0	
2	Tractors/Loaders/Backhoes	97	0.37	8		0	0	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**2/10/2023**	**Total phase:**	**59**			
		End Date:	**5/3/2023**					
1	Tractor/Loader/Backhoe	97	0.37	3		0	0	
1	Excavators	158	0.38	3		0	0	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**3/25/2023**	**Total phase:**	**300**			**Cement Trucks? ? Total Round-Trips**
		End Date:	**5/17/2024**					
0	Cranes	231	0.29			0	0	Electric? (Y/N) ___ Otherwise assumed diesel
1	Forklifts	89	0.2	4		0	0	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
0	Generator Sets	84	0.74			0	0	Or temporary line power? (Y/N) ___
0	Tractors/Loaders/Backhoes	97	0.37			0	0	
0	Welders	46	0.45			0	0	
	Other Equipment?							
	Building - Interior/Architectural Coating	**Start Date:**	**6/15/2024**	**Total phase:**	**20**			
		End Date:	**7/12/2024**					
1	Air Compressors	78	0.48	6		0	0	
0	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**5/18/2024**	**Total phase:**	**20**			
		Start Date:	**6/14/2024**					
1	Cement and Mortar Mixers	9	0.56	8		0	0	
2	Pavers	130	0.42	8		0	0	**Asphalt? ___ cubic yards or ____ round trips?**
2	Paving Equipment	132	0.36	8		0	0	
1	Rollers	80	0.38	8		0	0	
	Tractors/Loaders/Backhoes	97	0.37			0	0	
	Other Equipment?							
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Construction Criteria Air Pollutants						
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	**CO2e**	
Year	Tons				MT	
Construction Equipment						
2023	0.11	1.11	0.05	0.05	176.31	
2024	0.65	0.31	0.01	0.01	60.49	
EMFAC						
2023	0.02	0.09	0.01	0.00	80.84	
2024	0.01	0.05	0.00	0.00	42.25	
Total Construction Emissions by Year						
2023	0.13	1.20	0.06	0.05	257.15	
2024	0.66	0.35	0.02	0.01	102.74	
	Total Construction Emissions					
Tons	0.79	1.55	0.07	0.06	359.89	
Pounds/Workdays	*Average Daily Emissions*				Workdays	
2023	0.98	9.19	0.43	0.38		**261**
2024	9.46	5.10	0.26	0.21		**139**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		
	Total Construction Emissions					
Pounds	10.44	14.29	0.69	0.59	0.00	
Average	3.93	7.77	0.37	0.32	0.00	400.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Operational Criteria Air Pollutants						
Unmitigated	ROG	NOX	Total PM10	Total PM2.5		
Year	Tons					
Total	0.83	0.35	0.40	0.11		
	Existing Use Emissions					
Total	0.00	0.00	0.00	0.00		
	Net Annual Operational Emissions					
Tons/year	0.83	0.35	0.40	0.11		
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**		
	Average Daily Emissions					
Pounds Per Day	4.55	1.92	2.19	0.58		
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Category	**CO2e**			
	Project	Existing	Project 2030	Existing
Area	0.73	0.00	0.73	0.00
Energy	21.61	0.00	21.61	0.00
Mobile	443.58	0.00	396.63	0.00
Waste	26.67	0.00	26.67	0.00
Water	3.98	0.00	3.98	0.00
TOTAL	496.58	0.00	449.63	0.00
Net GHG Emissions		496.58		449.63
Service Population	156.00			
Per Capita Emissions		3.18		2.88

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.75	Acre	0.00	32,670.00	0
Condo/Townhouse	24.00	Dwelling Unit	0.00	35,160.00	69
Single Family Housing	35.00	Dwelling Unit	4.50	51,275.00	100

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2025
Utility Company	Sonoma Clean Power				
CO2 Intensity (lb/MWhr)	119.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Draft Project Description. Assume 15% of site paved Avg 1465sf/unit. Acreage based on provided site plan.

Construction Phase - added trenching and included estimated phase days

Off-road Equipment - Applicant provided construction equipment list and schedule

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Date: 1/21/2022 10:27 AM

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Trips and VMT - All trips entered into EMFAC2021

Demolition - Estimated from GoogleEarth

Grading - Model defaults

Vehicle Trips - default

Woodstoves - No Hearth

Energy Use - all electric with solar generation and battery storage

Water And Wastewater - WTP treatment

Construction Off-road Equipment Mitigation - BMPs and Tier 4i

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Vehicle Emission Factors - Emission factors from EMFAC2021

Fleet Mix - Fleet mix from EMFAC2021

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00

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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	230.00	300.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	8.00	20.00
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	5.00	10.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	T24NG	14,104.62	0.00
tblEnergyUse	T24NG	23,474.54	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00

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tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	3.60	0.00
tblFireplaces	NumberGas	8.75	0.00
tblFireplaces	NumberNoFireplace	0.96	0.00
tblFireplaces	NumberNoFireplace	2.80	0.00
tblFireplaces	NumberWood	4.08	0.00
tblFireplaces	NumberWood	15.05	0.00
tblFleetMix	HHD	6.6260e-003	7.9150e-003
tblFleetMix	HHD	6.6260e-003	7.9150e-003
tblFleetMix	HHD	6.6260e-003	7.9150e-003
tblFleetMix	LDA	0.55	0.47
tblFleetMix	LDA	0.55	0.47
tblFleetMix	LDA	0.55	0.47
tblFleetMix	LDT1	0.06	0.05
tblFleetMix	LDT1	0.06	0.05
tblFleetMix	LDT1	0.06	0.05
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.03	0.05
tblFleetMix	LHD1	0.03	0.05
tblFleetMix	LHD1	0.03	0.05
tblFleetMix	LHD2	8.6190e-003	0.01
tblFleetMix	LHD2	8.6190e-003	0.01
tblFleetMix	LHD2	8.6190e-003	0.01
tblFleetMix	MCY	0.03	0.03
tblFleetMix	MCY	0.03	0.03

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tblFleetMix	MCY	0.03	0.03
tblFleetMix	MDV	0.12	0.15
tblFleetMix	MDV	0.12	0.15
tblFleetMix	MDV	0.12	0.15
tblFleetMix	MH	4.1400e-003	4.8620e-003
tblFleetMix	MH	4.1400e-003	4.8620e-003
tblFleetMix	MH	4.1400e-003	4.8620e-003
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	MHD	0.01	0.02
tblFleetMix	OBUS	1.0950e-003	1.0160e-003
tblFleetMix	OBUS	1.0950e-003	1.0160e-003
tblFleetMix	OBUS	1.0950e-003	1.0160e-003
tblFleetMix	SBUS	1.5400e-003	1.4800e-003
tblFleetMix	SBUS	1.5400e-003	1.4800e-003
tblFleetMix	SBUS	1.5400e-003	1.4800e-003
tblFleetMix	UBUS	2.9300e-004	4.2200e-004
tblFleetMix	UBUS	2.9300e-004	4.2200e-004
tblFleetMix	UBUS	2.9300e-004	4.2200e-004
tblLandUse	LandUseSquareFeet	24,000.00	35,160.00
tblLandUse	LandUseSquareFeet	63,000.00	51,275.00
tblLandUse	LotAcreage	0.75	0.00
tblLandUse	LotAcreage	1.50	0.00
tblLandUse	LotAcreage	11.36	4.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	10.00	0.00
tblTripsAndVMT	VendorTripNumber	12.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	44.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	9.00	0.00
tblVehicleEF	HHD	0.02	0.18
tblVehicleEF	HHD	0.04	0.06
tblVehicleEF	HHD	5.37	4.64
tblVehicleEF	HHD	0.44	0.57
tblVehicleEF	HHD	0.01	1.3190e-003
tblVehicleEF	HHD	889.96	749.81
tblVehicleEF	HHD	1,418.69	1,659.43
tblVehicleEF	HHD	0.15	0.04

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tblVehicleEF	HHD	0.14	0.12
tblVehicleEF	HHD	0.22	0.26
tblVehicleEF	HHD	1.8000e-005	2.1000e-005
tblVehicleEF	HHD	4.78	3.89
tblVehicleEF	HHD	2.81	2.08
tblVehicleEF	HHD	2.81	2.78
tblVehicleEF	HHD	2.8640e-003	2.8410e-003
tblVehicleEF	HHD	0.06	0.08
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	2.7400e-003	2.7130e-003
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	8.4860e-003	8.4740e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	2.0000e-006	1.0000e-006
tblVehicleEF	HHD	8.0000e-006	3.6000e-004
tblVehicleEF	HHD	4.2000e-004	1.0200e-004
tblVehicleEF	HHD	0.37	0.30
tblVehicleEF	HHD	4.0000e-006	0.00
tblVehicleEF	HHD	0.03	0.02
tblVehicleEF	HHD	2.5600e-004	9.3500e-004
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	8.3010e-003	6.5990e-003
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	8.0000e-006	3.6000e-004
tblVehicleEF	HHD	4.2000e-004	1.0200e-004
tblVehicleEF	HHD	0.42	0.50
tblVehicleEF	HHD	4.0000e-006	0.00

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tblVehicleEF	HHD	0.08	0.09
tblVehicleEF	HHD	2.5600e-004	9.3500e-004
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	LDA	1.9810e-003	2.3030e-003
tblVehicleEF	LDA	0.05	0.07
tblVehicleEF	LDA	0.56	0.71
tblVehicleEF	LDA	2.14	3.14
tblVehicleEF	LDA	243.84	249.42
tblVehicleEF	LDA	50.92	65.40
tblVehicleEF	LDA	4.3200e-003	4.6290e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.17	0.25
tblVehicleEF	LDA	0.04	8.3980e-003
tblVehicleEF	LDA	1.4700e-003	1.2770e-003
tblVehicleEF	LDA	1.7150e-003	1.9640e-003
tblVehicleEF	LDA	0.02	2.9390e-003
tblVehicleEF	LDA	1.3560e-003	1.1770e-003
tblVehicleEF	LDA	1.5770e-003	1.8060e-003
tblVehicleEF	LDA	0.04	0.32
tblVehicleEF	LDA	0.10	0.09
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	7.6830e-003	9.0850e-003
tblVehicleEF	LDA	0.03	0.24
tblVehicleEF	LDA	0.20	0.32
tblVehicleEF	LDA	2.3400e-003	2.4650e-003
tblVehicleEF	LDA	4.8900e-004	6.4700e-004
tblVehicleEF	LDA	0.04	0.32
tblVehicleEF	LDA	0.10	0.09

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tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.24
tblVehicleEF	LDA	0.22	0.35
tblVehicleEF	LDT1	5.3460e-003	8.3860e-003
tblVehicleEF	LDT1	0.07	0.13
tblVehicleEF	LDT1	1.12	1.83
tblVehicleEF	LDT1	2.46	7.01
tblVehicleEF	LDT1	299.78	330.70
tblVehicleEF	LDT1	64.18	91.18
tblVehicleEF	LDT1	7.5950e-003	0.01
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.10	0.18
tblVehicleEF	LDT1	0.27	0.48
tblVehicleEF	LDT1	0.04	0.01
tblVehicleEF	LDT1	2.0010e-003	2.3370e-003
tblVehicleEF	LDT1	2.4010e-003	3.4730e-003
tblVehicleEF	LDT1	0.02	3.7750e-003
tblVehicleEF	LDT1	1.8420e-003	2.1530e-003
tblVehicleEF	LDT1	2.2080e-003	3.1930e-003
tblVehicleEF	LDT1	0.11	0.84
tblVehicleEF	LDT1	0.24	0.23
tblVehicleEF	LDT1	0.09	0.00
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.13	0.68
tblVehicleEF	LDT1	0.38	0.71
tblVehicleEF	LDT1	2.8780e-003	3.2690e-003
tblVehicleEF	LDT1	6.1600e-004	9.0100e-004
tblVehicleEF	LDT1	0.11	0.84

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tblVehicleEF	LDT1	0.24	0.23
tblVehicleEF	LDT1	0.09	0.00
tblVehicleEF	LDT1	0.03	0.06
tblVehicleEF	LDT1	0.13	0.68
tblVehicleEF	LDT1	0.41	0.78
tblVehicleEF	LDT2	3.5280e-003	3.1090e-003
tblVehicleEF	LDT2	0.07	0.09
tblVehicleEF	LDT2	0.82	0.89
tblVehicleEF	LDT2	2.80	3.97
tblVehicleEF	LDT2	314.82	337.47
tblVehicleEF	LDT2	67.58	87.72
tblVehicleEF	LDT2	6.3450e-003	6.5390e-003
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	0.07	0.08
tblVehicleEF	LDT2	0.27	0.35
tblVehicleEF	LDT2	0.04	0.01
tblVehicleEF	LDT2	1.5110e-003	1.4050e-003
tblVehicleEF	LDT2	1.7840e-003	2.1650e-003
tblVehicleEF	LDT2	0.02	3.5750e-003
tblVehicleEF	LDT2	1.3910e-003	1.2930e-003
tblVehicleEF	LDT2	1.6400e-003	1.9910e-003
tblVehicleEF	LDT2	0.07	0.34
tblVehicleEF	LDT2	0.15	0.09
tblVehicleEF	LDT2	0.06	0.00
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.08	0.26
tblVehicleEF	LDT2	0.32	0.41
tblVehicleEF	LDT2	3.0220e-003	3.3360e-003
tblVehicleEF	LDT2	6.4900e-004	8.6700e-004

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tblVehicleEF	LDT2	0.07	0.34
tblVehicleEF	LDT2	0.15	0.09
tblVehicleEF	LDT2	0.06	0.00
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.08	0.26
tblVehicleEF	LDT2	0.35	0.45
tblVehicleEF	LHD1	4.0030e-003	4.3360e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.16	0.17
tblVehicleEF	LHD1	1.12	1.08
tblVehicleEF	LHD1	0.93	1.70
tblVehicleEF	LHD1	9.51	9.32
tblVehicleEF	LHD1	751.80	765.78
tblVehicleEF	LHD1	9.25	14.01
tblVehicleEF	LHD1	9.7400e-004	8.9200e-004
tblVehicleEF	LHD1	0.06	0.06
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.09	0.08
tblVehicleEF	LHD1	1.53	1.30
tblVehicleEF	LHD1	0.26	0.35
tblVehicleEF	LHD1	1.1400e-003	1.0260e-003
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	0.01	9.9820e-003
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	2.4400e-004	2.2600e-004
tblVehicleEF	LHD1	1.0900e-003	9.8100e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.5560e-003	2.4960e-003

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tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	2.2400e-004	2.0700e-004
tblVehicleEF	LHD1	2.0910e-003	0.12
tblVehicleEF	LHD1	0.09	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.0320e-003	0.00
tblVehicleEF	LHD1	0.14	0.14
tblVehicleEF	LHD1	0.33	0.18
tblVehicleEF	LHD1	0.07	0.10
tblVehicleEF	LHD1	9.2000e-005	9.0000e-005
tblVehicleEF	LHD1	7.3020e-003	7.4400e-003
tblVehicleEF	LHD1	9.2000e-005	1.3900e-004
tblVehicleEF	LHD1	2.0910e-003	0.12
tblVehicleEF	LHD1	0.09	0.03
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.0320e-003	0.00
tblVehicleEF	LHD1	0.17	0.17
tblVehicleEF	LHD1	0.33	0.18
tblVehicleEF	LHD1	0.08	0.11
tblVehicleEF	LHD2	2.8120e-003	2.8680e-003
tblVehicleEF	LHD2	7.6000e-003	7.7940e-003
tblVehicleEF	LHD2	7.6030e-003	0.01
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.75	0.62
tblVehicleEF	LHD2	0.52	1.03
tblVehicleEF	LHD2	14.77	14.48
tblVehicleEF	LHD2	761.89	834.49
tblVehicleEF	LHD2	6.68	8.49
tblVehicleEF	LHD2	1.9280e-003	1.8640e-003

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tblVehicleEF	LHD2	0.07	0.09
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	1.29	1.15
tblVehicleEF	LHD2	0.17	0.21
tblVehicleEF	LHD2	1.5310e-003	1.4830e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.03
tblVehicleEF	LHD2	1.0500e-004	8.1000e-005
tblVehicleEF	LHD2	1.4640e-003	1.4190e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.7280e-003	2.7030e-003
tblVehicleEF	LHD2	0.02	0.03
tblVehicleEF	LHD2	9.6000e-005	7.4000e-005
tblVehicleEF	LHD2	8.7700e-004	0.05
tblVehicleEF	LHD2	0.04	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.8300e-004	0.00
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.10	0.08
tblVehicleEF	LHD2	0.04	0.05
tblVehicleEF	LHD2	1.4100e-004	1.3800e-004
tblVehicleEF	LHD2	7.3400e-003	8.0260e-003
tblVehicleEF	LHD2	6.6000e-005	8.4000e-005
tblVehicleEF	LHD2	8.7700e-004	0.05
tblVehicleEF	LHD2	0.04	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.8300e-004	0.00

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tblVehicleEF	LHD2	0.15	0.16
tblVehicleEF	LHD2	0.10	0.08
tblVehicleEF	LHD2	0.04	0.06
tblVehicleEF	MCY	0.36	0.20
tblVehicleEF	MCY	0.27	0.22
tblVehicleEF	MCY	21.08	15.53
tblVehicleEF	MCY	9.22	8.73
tblVehicleEF	MCY	217.51	191.53
tblVehicleEF	MCY	63.10	55.31
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	9.7420e-003
tblVehicleEF	MCY	1.19	0.67
tblVehicleEF	MCY	0.28	0.17
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.1620e-003	1.9980e-003
tblVehicleEF	MCY	3.1630e-003	3.6830e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	2.0240e-003	1.8730e-003
tblVehicleEF	MCY	2.9820e-003	3.4720e-003
tblVehicleEF	MCY	0.91	4.93
tblVehicleEF	MCY	0.87	3.55
tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	2.47	1.34
tblVehicleEF	MCY	0.76	3.93
tblVehicleEF	MCY	2.06	1.65
tblVehicleEF	MCY	2.1520e-003	1.8930e-003
tblVehicleEF	MCY	6.2400e-004	5.4700e-004
tblVehicleEF	MCY	0.91	0.15
tblVehicleEF	MCY	0.87	3.55

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tblVehicleEF	MCY	0.48	0.00
tblVehicleEF	MCY	3.03	1.59
tblVehicleEF	MCY	0.76	3.93
tblVehicleEF	MCY	2.24	1.79
tblVehicleEF	MDV	4.0540e-003	4.1150e-003
tblVehicleEF	MDV	0.08	0.11
tblVehicleEF	MDV	0.86	1.03
tblVehicleEF	MDV	3.18	4.43
tblVehicleEF	MDV	387.55	411.31
tblVehicleEF	MDV	82.60	106.15
tblVehicleEF	MDV	8.4830e-003	9.3420e-003
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.08	0.11
tblVehicleEF	MDV	0.33	0.47
tblVehicleEF	MDV	0.04	0.01
tblVehicleEF	MDV	1.5770e-003	1.5240e-003
tblVehicleEF	MDV	1.8660e-003	2.2760e-003
tblVehicleEF	MDV	0.02	3.6630e-003
tblVehicleEF	MDV	1.4550e-003	1.4070e-003
tblVehicleEF	MDV	1.7160e-003	2.0920e-003
tblVehicleEF	MDV	0.08	0.45
tblVehicleEF	MDV	0.18	0.12
tblVehicleEF	MDV	0.08	0.00
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.09	0.35
tblVehicleEF	MDV	0.40	0.57
tblVehicleEF	MDV	3.7190e-003	4.0630e-003
tblVehicleEF	MDV	7.9300e-004	1.0490e-003
tblVehicleEF	MDV	0.08	0.45

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tblVehicleEF	MDV	0.18	0.12
tblVehicleEF	MDV	0.08	0.00
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.09	0.35
tblVehicleEF	MDV	0.44	0.62
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.25	1.28
tblVehicleEF	MH	2.00	2.29
tblVehicleEF	MH	1,505.95	1,629.64
tblVehicleEF	MH	17.37	20.52
tblVehicleEF	MH	0.07	0.08
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	1.85	1.98
tblVehicleEF	MH	0.24	0.29
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.04	0.05
tblVehicleEF	MH	2.4500e-004	2.7800e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.3210e-003	3.3670e-003
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	2.2500e-004	2.5600e-004
tblVehicleEF	MH	0.68	33.40
tblVehicleEF	MH	0.06	8.56
tblVehicleEF	MH	0.25	0.00
tblVehicleEF	MH	0.09	0.10
tblVehicleEF	MH	0.02	0.21
tblVehicleEF	MH	0.09	0.11

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tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.7200e-004	2.0300e-004
tblVehicleEF	MH	0.68	33.40
tblVehicleEF	MH	0.06	8.56
tblVehicleEF	MH	0.25	0.00
tblVehicleEF	MH	0.11	0.12
tblVehicleEF	MH	0.02	0.21
tblVehicleEF	MH	0.10	0.12
tblVehicleEF	MHD	2.3490e-003	0.01
tblVehicleEF	MHD	1.5330e-003	7.6690e-003
tblVehicleEF	MHD	6.4340e-003	7.9530e-003
tblVehicleEF	MHD	0.33	0.67
tblVehicleEF	MHD	0.22	0.31
tblVehicleEF	MHD	0.80	0.98
tblVehicleEF	MHD	68.68	162.65
tblVehicleEF	MHD	1,026.30	1,199.03
tblVehicleEF	MHD	6.19	7.78
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.14	0.16
tblVehicleEF	MHD	4.5760e-003	5.2830e-003
tblVehicleEF	MHD	0.39	0.87
tblVehicleEF	MHD	1.57	0.97
tblVehicleEF	MHD	1.85	1.47
tblVehicleEF	MHD	2.9900e-004	1.8000e-003
tblVehicleEF	MHD	0.13	0.05
tblVehicleEF	MHD	7.8810e-003	0.01
tblVehicleEF	MHD	8.2000e-005	1.0400e-004
tblVehicleEF	MHD	2.8600e-004	1.7220e-003
tblVehicleEF	MHD	0.06	0.02

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tblVehicleEF	MHD	7.5360e-003	0.01
tblVehicleEF	MHD	7.5000e-005	9.5000e-005
tblVehicleEF	MHD	3.2600e-004	0.02
tblVehicleEF	MHD	0.02	5.9960e-003
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	1.6800e-004	0.00
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.04	0.04
tblVehicleEF	MHD	6.5100e-004	1.5200e-003
tblVehicleEF	MHD	9.7500e-003	0.01
tblVehicleEF	MHD	6.1000e-005	7.7000e-005
tblVehicleEF	MHD	3.2600e-004	0.02
tblVehicleEF	MHD	0.02	5.9960e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.6800e-004	0.00
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	OBUS	7.1450e-003	8.1750e-003
tblVehicleEF	OBUS	4.5070e-003	0.01
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.65	0.60
tblVehicleEF	OBUS	0.54	0.72
tblVehicleEF	OBUS	2.11	2.62
tblVehicleEF	OBUS	102.51	91.65
tblVehicleEF	OBUS	1,312.38	1,497.93
tblVehicleEF	OBUS	15.81	19.59
tblVehicleEF	OBUS	0.01	0.01

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tblVehicleEF	OBUS	0.13	0.15
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.43	0.37
tblVehicleEF	OBUS	1.51	1.15
tblVehicleEF	OBUS	1.10	0.87
tblVehicleEF	OBUS	1.4200e-004	4.7600e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	7.9840e-003	0.02
tblVehicleEF	OBUS	1.7600e-004	2.0800e-004
tblVehicleEF	OBUS	1.3600e-004	4.5600e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.6260e-003	0.02
tblVehicleEF	OBUS	1.6100e-004	1.9100e-004
tblVehicleEF	OBUS	1.4060e-003	0.09
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.05
tblVehicleEF	OBUS	6.0600e-004	0.00
tblVehicleEF	OBUS	0.03	0.07
tblVehicleEF	OBUS	0.07	0.10
tblVehicleEF	OBUS	0.10	0.12
tblVehicleEF	OBUS	9.7300e-004	8.7000e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.5600e-004	1.9400e-004
tblVehicleEF	OBUS	1.4060e-003	0.09
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.07	0.06
tblVehicleEF	OBUS	6.0600e-004	0.00
tblVehicleEF	OBUS	0.04	0.09
tblVehicleEF	OBUS	0.07	0.10

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tblVehicleEF	OBUS	0.11	0.14
tblVehicleEF	SBUS	0.03	0.09
tblVehicleEF	SBUS	4.2340e-003	0.20
tblVehicleEF	SBUS	2.7040e-003	2.4920e-003
tblVehicleEF	SBUS	1.59	1.15
tblVehicleEF	SBUS	0.32	0.90
tblVehicleEF	SBUS	0.39	0.34
tblVehicleEF	SBUS	334.60	181.28
tblVehicleEF	SBUS	1,065.38	1,078.71
tblVehicleEF	SBUS	2.29	2.12
tblVehicleEF	SBUS	0.05	0.03
tblVehicleEF	SBUS	0.15	0.15
tblVehicleEF	SBUS	2.7540e-003	2.6940e-003
tblVehicleEF	SBUS	3.11	1.35
tblVehicleEF	SBUS	4.09	2.50
tblVehicleEF	SBUS	1.05	0.45
tblVehicleEF	SBUS	2.5480e-003	1.1120e-003
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	2.9000e-005	2.3000e-005
tblVehicleEF	SBUS	2.4370e-003	1.0620e-003
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.8200e-003	2.7530e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	2.7000e-005	2.1000e-005
tblVehicleEF	SBUS	2.5400e-004	0.01
tblVehicleEF	SBUS	2.6100e-003	4.0560e-003
tblVehicleEF	SBUS	0.15	0.11

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tblVehicleEF	SBUS	1.2000e-004	0.00
tblVehicleEF	SBUS	0.07	0.05
tblVehicleEF	SBUS	5.8280e-003	7.7970e-003
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	3.1750e-003	1.5660e-003
tblVehicleEF	SBUS	0.01	9.6580e-003
tblVehicleEF	SBUS	2.3000e-005	2.1000e-005
tblVehicleEF	SBUS	2.5400e-004	0.01
tblVehicleEF	SBUS	2.6100e-003	4.0560e-003
tblVehicleEF	SBUS	0.22	0.23
tblVehicleEF	SBUS	1.2000e-004	0.00
tblVehicleEF	SBUS	0.08	0.25
tblVehicleEF	SBUS	5.8280e-003	7.7970e-003
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	UBUS	2.29	0.60
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	17.52	8.81
tblVehicleEF	UBUS	0.84	2.66
tblVehicleEF	UBUS	1,702.90	1,251.03
tblVehicleEF	UBUS	8.29	20.64
tblVehicleEF	UBUS	0.28	0.17
tblVehicleEF	UBUS	6.6330e-003	0.02
tblVehicleEF	UBUS	0.64	0.29
tblVehicleEF	UBUS	0.08	0.20
tblVehicleEF	UBUS	0.08	0.11
tblVehicleEF	UBUS	0.03	0.03
tblVehicleEF	UBUS	4.6580e-003	3.1740e-003
tblVehicleEF	UBUS	8.5000e-005	1.3100e-004
tblVehicleEF	UBUS	0.03	0.04

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tblVehicleEF	UBUS	7.7720e-003	6.3890e-003
tblVehicleEF	UBUS	4.4500e-003	3.0240e-003
tblVehicleEF	UBUS	7.9000e-005	1.2100e-004
tblVehicleEF	UBUS	1.9200e-004	0.04
tblVehicleEF	UBUS	2.5600e-003	0.01
tblVehicleEF	UBUS	1.0800e-004	0.00
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	5.7800e-004	0.03
tblVehicleEF	UBUS	0.05	0.09
tblVehicleEF	UBUS	9.4990e-003	7.5470e-003
tblVehicleEF	UBUS	8.2000e-005	2.0400e-004
tblVehicleEF	UBUS	1.9200e-004	0.04
tblVehicleEF	UBUS	2.5600e-003	0.01
tblVehicleEF	UBUS	1.0800e-004	0.00
tblVehicleEF	UBUS	2.33	0.64
tblVehicleEF	UBUS	5.7800e-004	0.03
tblVehicleEF	UBUS	0.05	0.10
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	0.48	0.00
tblWoodstoves	NumberCatalytic	1.40	0.00
tblWoodstoves	NumberNoncatalytic	0.48	0.00

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tblWoodstoves	NumberNoncatalytic	1.40	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	21.06	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1081	1.1067	1.1330	1.9900e-003	0.2321	0.0505	0.2826	0.1049	0.0465	0.1514	0.0000	174.9128	174.9128	0.0558	0.0000	176.3086
2024	0.6473	0.3080	0.4709	6.9000e-004	0.0000	0.0146	0.0146	0.0000	0.0135	0.0135	0.0000	60.0205	60.0205	0.0186	0.0000	60.4863
Maximum	**0.6473**	**1.1067**	**1.1330**	**1.9900e-003**	**0.2321**	**0.0505**	**0.2826**	**0.1049**	**0.0465**	**0.1514**	**0.0000**	**174.9128**	**174.9128**	**0.0558**	**0.0000**	**176.3086**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2023	0.0379	0.7337	1.3259	1.9900e-003	0.1045	3.2400e-003	0.1077	0.0472	3.2400e-003	0.0505	0.0000	174.9126	174.9126	0.0558	0.0000	176.3084
2024	0.6286	0.2941	0.5079	6.9000e-004	0.0000	1.1000e-003	1.1000e-003	0.0000	1.1000e-003	1.1000e-003	0.0000	60.0205	60.0205	0.0186	0.0000	60.4862
Maximum	**0.6286**	**0.7337**	**1.3259**	**1.9900e-003**	**0.1045**	**3.2400e-003**	**0.1077**	**0.0472**	**3.2400e-003**	**0.0505**	**0.0000**	**174.9126**	**174.9126**	**0.0558**	**0.0000**	**176.3084**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**11.77**	**27.35**	**-14.34**	**0.00**	**55.00**	**93.33**	**63.40**	**55.00**	**92.77**	**68.74**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2023	3-31-2023	0.7118	0.3538
2	4-1-2023	6-30-2023	0.1763	0.1496
3	7-1-2023	9-30-2023	0.1630	0.1344
4	10-1-2023	12-31-2023	0.1630	0.1344
5	1-1-2024	3-31-2024	0.1517	0.1330
6	4-1-2024	6-30-2024	0.5306	0.5183
7	7-1-2024	9-30-2024	0.2697	0.2685
		Highest	0.7118	0.5183

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4144	5.0400e-003	0.4377	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.9000e-004	0.0000	0.7327

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Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	21.2532	21.2532	5.8500e-003	7.1000e-004	21.6105
Mobile	0.4164	0.3454	2.4169	4.7000e-003	0.3931	4.9900e-003	0.3981	0.0986	4.7000e-003	0.1033	0.0000	435.6423	435.6423	0.0272	0.0253	443.8514
Waste						0.0000	0.0000		0.0000	0.0000	10.7666	0.0000	10.7666	0.6363	0.0000	26.6739
Water						0.0000	0.0000		0.0000	0.0000	1.3600	1.5936	2.9537	5.1200e-003	3.0100e-003	3.9789
Total	**0.8307**	**0.3505**	**2.8546**	**4.7200e-003**	**0.3931**	**7.4200e-003**	**0.4005**	**0.0986**	**7.1300e-003**	**0.1057**	**12.1267**	**459.2047**	**471.3314**	**0.6752**	**0.0290**	**496.8474**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4144	5.0400e-003	0.4377	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.9000e-004	0.0000	0.7327
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	21.2532	21.2532	5.8500e-003	7.1000e-004	21.6105
Mobile	0.4164	0.3454	2.4169	4.7000e-003	0.3931	4.9900e-003	0.3981	0.0986	4.7000e-003	0.1033	0.0000	435.6423	435.6423	0.0272	0.0253	443.8514
Waste						0.0000	0.0000		0.0000	0.0000	10.7666	0.0000	10.7666	0.6363	0.0000	26.6739
Water						0.0000	0.0000		0.0000	0.0000	1.0880	1.3391	2.4271	4.1100e-003	2.4100e-003	3.2483
Total	**0.8307**	**0.3505**	**2.8546**	**4.7200e-003**	**0.3931**	**7.4200e-003**	**0.4005**	**0.0986**	**7.1300e-003**	**0.1057**	**11.8547**	**458.9502**	**470.8048**	**0.6742**	**0.0284**	**496.1169**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.24**	**0.06**	**0.11**	**0.15**	**2.07**	**0.15**

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3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	1/13/2023	5	10	
2	Site Preparation	Site Preparation	1/14/2023	1/27/2023	5	10	
3	Grading	Grading	1/28/2023	2/24/2023	5	20	
4	Underground	Trenching	2/10/2023	5/3/2023	5	59	
5	Building Construction	Building Construction	3/25/2023	5/17/2024	5	300	
6	Paving	Paving	5/18/2024	6/14/2024	5	20	
7	Architectural Coating	Architectural Coating	6/15/2024	7/12/2024	5	20	

Acres of Grading (Site Preparation Phase): 35

Acres of Grading (Grading Phase): 60

Acres of Paving: 0

Residential Indoor: 175,031; Residential Outdoor: 58,344; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,960

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Graders	3	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	4	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41

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Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground	Excavators	1	3.00	158	0.38
Underground	Tractors/Loaders/Backhoes	1	3.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Architectural Coating	Aerial Lifts	0	6.00	63	0.31
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0800e-003	0.0000	1.0800e-003	1.6000e-004	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0400e-003	0.0563	0.0501	1.0000e-004		2.6300e-003	2.6300e-003		2.4700e-003	2.4700e-003	0.0000	8.7079	8.7079	2.0800e-003	0.0000	8.7599
Total	**6.0400e-003**	**0.0563**	**0.0501**	**1.0000e-004**	**1.0800e-003**	**2.6300e-003**	**3.7100e-003**	**1.6000e-004**	**2.4700e-003**	**2.6300e-003**	**0.0000**	**8.7079**	**8.7079**	**2.0800e-003**	**0.0000**	**8.7599**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0338	0.0615	1.0000e-004		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	8.7079	8.7079	2.0800e-003	0.0000	8.7599
Total	**1.5900e-003**	**0.0338**	**0.0615**	**1.0000e-004**	**4.9000e-004**	**1.5000e-004**	**6.4000e-004**	**7.0000e-005**	**1.5000e-004**	**2.2000e-004**	**0.0000**	**8.7079**	**8.7079**	**2.0800e-003**	**0.0000**	**8.7599**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1390	0.0000	0.1390	0.0682	0.0000	0.0682	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0202	0.2200	0.0987	2.9000e-004		9.0600e-003	9.0600e-003		8.3300e-003	8.3300e-003	0.0000	25.0934	25.0934	8.1200e-003	0.0000	25.2963
Total	**0.0202**	**0.2200**	**0.0987**	**2.9000e-004**	**0.1390**	**9.0600e-003**	**0.1481**	**0.0682**	**8.3300e-003**	**0.0765**	**0.0000**	**25.0934**	**25.0934**	**8.1200e-003**	**0.0000**	**25.2963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0626	0.0000	0.0626	0.0307	0.0000	0.0307	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7600e-003	0.0779	0.1551	2.9000e-004		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	25.0934	25.0934	8.1200e-003	0.0000	25.2963
Total	**4.7600e-003**	**0.0779**	**0.1551**	**2.9000e-004**	**0.0626**	**4.7000e-004**	**0.0630**	**0.0307**	**4.7000e-004**	**0.0312**	**0.0000**	**25.0934**	**25.0934**	**8.1200e-003**	**0.0000**	**25.2963**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0920	0.0000	0.0920	0.0365	0.0000	0.0365	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0332	0.3452	0.2805	6.2000e-004		0.0142	0.0142		0.0131	0.0131	0.0000	54.5352	54.5352	0.0176	0.0000	54.9762
Total	**0.0332**	**0.3452**	**0.2805**	**6.2000e-004**	**0.0920**	**0.0142**	**0.1063**	**0.0365**	**0.0131**	**0.0497**	**0.0000**	**54.5352**	**54.5352**	**0.0176**	**0.0000**	**54.9762**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0414	0.0000	0.0414	0.0164	0.0000	0.0164	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0101	0.1927	0.3672	6.2000e-004		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	54.5351	54.5351	0.0176	0.0000	54.9761
Total	**0.0101**	**0.1927**	**0.3672**	**6.2000e-004**	**0.0414**	**1.0200e-003**	**0.0424**	**0.0164**	**1.0200e-003**	**0.0175**	**0.0000**	**54.5351**	**54.5351**	**0.0176**	**0.0000**	**54.9761**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Creekwood Subdivision, Petaluma - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Underground - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.7600e-003	0.0341	0.0607	9.0000e-005		1.6800e-003	1.6800e-003		1.5400e-003	1.5400e-003	0.0000	8.0455	8.0455	2.6000e-003	0.0000	8.1105
Total	**3.7600e-003**	**0.0341**	**0.0607**	**9.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.5400e-003**	**1.5400e-003**	**0.0000**	**8.0455**	**8.0455**	**2.6000e-003**	**0.0000**	**8.1105**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Creekwood Subdivision, Petaluma - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4700e-003	0.0402	0.0693	9.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	8.0455	8.0455	2.6000e-003	0.0000	8.1105
Total	**1.4700e-003**	**0.0402**	**0.0693**	**9.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.5000e-004**	**1.5000e-004**	**0.0000**	**8.0455**	**8.0455**	**2.6000e-003**	**0.0000**	**8.1105**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Creekwood Subdivision, Petaluma - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0449	0.4511	0.6430	8.9000e-004		0.0229	0.0229		0.0210	0.0210	0.0000	78.5308	78.5308	0.0254	0.0000	79.1657
Total	**0.0449**	**0.4511**	**0.6430**	**8.9000e-004**		**0.0229**	**0.0229**		**0.0210**	**0.0210**	**0.0000**	**78.5308**	**78.5308**	**0.0254**	**0.0000**	**79.1657**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Creekwood Subdivision, Petaluma - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0200	0.3892	0.6729	8.9000e-004		1.4500e-003	1.4500e-003		1.4500e-003	1.4500e-003	0.0000	78.5307	78.5307	0.0254	0.0000	79.1657
Total	**0.0200**	**0.3892**	**0.6729**	**8.9000e-004**		**1.4500e-003**	**1.4500e-003**		**1.4500e-003**	**1.4500e-003**	**0.0000**	**78.5307**	**78.5307**	**0.0254**	**0.0000**	**79.1657**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

Date: 1/21/2022 10:27 AM

Creekwood Subdivision, Petaluma - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0213	0.2122	0.3219	4.5000e-004		0.0100	0.0100		9.2000e-003	9.2000e-003	0.0000	39.2880	39.2880	0.0127	0.0000	39.6057
Total	**0.0213**	**0.2122**	**0.3219**	**4.5000e-004**		**0.0100**	**0.0100**		**9.2000e-003**	**9.2000e-003**	**0.0000**	**39.2880**	**39.2880**	**0.0127**	**0.0000**	**39.6057**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

Creekwood Subdivision, Petaluma - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0100	0.1946	0.3364	4.5000e-004		7.3000e-004	7.3000e-004		7.3000e-004	7.3000e-004	0.0000	39.2880	39.2880	0.0127	0.0000	39.6057
Total	**0.0100**	**0.1946**	**0.3364**	**4.5000e-004**		**7.3000e-004**	**7.3000e-004**		**7.3000e-004**	**7.3000e-004**	**0.0000**	**39.2880**	**39.2880**	**0.0127**	**0.0000**	**39.6057**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	tons/yr										MT/yr					
Off-Road	9.0100e-003	0.0837	0.1308	2.1000e-004		4.0200e-003	4.0200e-003		3.7100e-003	3.7100e-003	0.0000	18.1792	18.1792	5.7800e-003	0.0000	18.3237
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.0100e-003**	**0.0837**	**0.1308**	**2.1000e-004**		**4.0200e-003**	**4.0200e-003**		**3.7100e-003**	**3.7100e-003**	**0.0000**	**18.1792**	**18.1792**	**5.7800e-003**	**0.0000**	**18.3237**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	tons/yr										MT/yr					
Off-Road	2.7500e-003	0.0889	0.1531	2.1000e-004		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	18.1792	18.1792	5.7800e-003	0.0000	18.3237
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7500e-003**	**0.0889**	**0.1531**	**2.1000e-004**		**3.3000e-004**	**3.3000e-004**		**3.3000e-004**	**3.3000e-004**	**0.0000**	**18.1792**	**18.1792**	**5.7800e-003**	**0.0000**	**18.3237**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	tons/yr										MT/yr					
Archit. Coating	0.6153					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**0.6171**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	tons/yr										MT/yr					
Archit. Coating	0.6153					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4000e-004	0.0106	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**0.6158**	**0.0106**	**0.0183**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4164	0.3454	2.4169	4.7000e-003	0.3931	4.9900e-003	0.3981	0.0986	4.7000e-003	0.1033	0.0000	435.6423	435.6423	0.0272	0.0253	443.8514
Unmitigated	0.4164	0.3454	2.4169	4.7000e-003	0.3931	4.9900e-003	0.3981	0.0986	4.7000e-003	0.1033	0.0000	435.6423	435.6423	0.0272	0.0253	443.8514

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	175.68	195.36	150.72	404,010	404,010
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	330.40	333.90	299.25	753,971	753,971
Total	506.08	529.26	449.97	1,157,981	1,157,981

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.467361	0.051994	0.211970	0.145720	0.047541	0.012328	0.017909	0.007915	0.001016	0.000422	0.029481	0.001480	0.004862
Other Asphalt Surfaces	0.467361	0.051994	0.211970	0.145720	0.047541	0.012328	0.017909	0.007915	0.001016	0.000422	0.029481	0.001480	0.004862

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Single Family Housing	0.467361	0.051994	0.211970	0.145720	0.047541	0.012328	0.017909	0.007915	0.001016	0.000422	0.029481	0.001480	0.004862

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	21.2532	21.2532	5.8500e-003	7.1000e-004	21.6105
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	21.2532	21.2532	5.8500e-003	7.1000e-004	21.6105
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					

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Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	kWh/yr	MT/yr			
Condo/Townhouse	116363	6.3327	1.7400e-003	2.1000e-004	6.4392
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	274163	14.9205	4.1000e-003	5.0000e-004	15.1713
Total		**21.2532**	**5.8400e-003**	**7.1000e-004**	**21.6105**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	116363	6.3327	1.7400e-003	2.1000e-004	6.4392
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	274163	14.9205	4.1000e-003	5.0000e-004	15.1713
Total		**21.2532**	**5.8400e-003**	**7.1000e-004**	**21.6105**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4144	5.0400e-003	0.4377	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.9000e-004	0.0000	0.7327
Unmitigated	0.4144	5.0400e-003	0.4377	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.9000e-004	0.0000	0.7327

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0615					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0131	5.0400e-003	0.4377	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.9000e-004	0.0000	0.7327
Total	**0.4144**	**5.0400e-003**	**0.4377**	**2.0000e-005**		**2.4300e-003**	**2.4300e-003**		**2.4300e-003**	**2.4300e-003**	**0.0000**	**0.7156**	**0.7156**	**6.9000e-004**	**0.0000**	**0.7327**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0615					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0131	5.0400e-003	0.4377	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.9000e-004	0.0000	0.7327
Total	**0.4144**	**5.0400e-003**	**0.4377**	**2.0000e-005**		**2.4300e-003**	**2.4300e-003**		**2.4300e-003**	**2.4300e-003**	**0.0000**	**0.7156**	**0.7156**	**6.9000e-004**	**0.0000**	**0.7327**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	MT/yr			
Mitigated	2.4271	4.1100e-003	2.4100e-003	3.2483
Unmitigated	2.9537	5.1200e-003	3.0100e-003	3.9789

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.5637 / 0.985809	1.2015	2.0800e-003	1.2200e-003	1.6185
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.28039 / 1.43764	1.7522	3.0400e-003	1.7900e-003	2.3603
Total		**2.9537**	**5.1200e-003**	**3.0100e-003**	**3.9789**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Condo/Townhouse	1.25096 / 0.925674	0.9873	1.6700e-003	9.8000e-004	1.3214
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.82431 / 1.34994	1.4398	2.4400e-003	1.4300e-003	1.9270
Total		**2.4271**	**4.1100e-003**	**2.4100e-003**	**3.2483**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.7666	0.6363	0.0000	26.6739
Unmitigated	10.7666	0.6363	0.0000	26.6739

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	tons	MT/yr			
Condo/Townhouse	11.04	2.2410	0.1324	0.0000	5.5520
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	42	8.5256	0.5039	0.0000	21.1219
Total		**10.7666**	**0.6363**	**0.0000**	**26.6739**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	11.04	2.2410	0.1324	0.0000	5.5520
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	42	8.5256	0.5039	0.0000	21.1219
Total		**10.7666**	**0.6363**	**0.0000**	**26.6739**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Creekwood Subdivision, Petaluma

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.75	Acre	0.00	32,670.00	0
Condo/Townhouse	24.00	Dwelling Unit	0.00	35,160.00	69
Single Family Housing	35.00	Dwelling Unit	4.50	51,275.00	100

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2030
Utility Company	Sonoma Clean Power				
CO2 Intensity (lb/MWhr)	119.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Draft Project Description. Assume 15% of site paved Avg 1465sf/unit. Acreage based on provided site plan.

Construction Phase - added trenching and included estimated phase days

Off-road Equipment - Applicant provided construction equipment list and schedule

Off-road Equipment - Applicant provided construction equipment list and schedule

Off-road Equipment - Applicant provided construction equipment list and schedule

Off-road Equipment - Applicant provided construction equipment list and schedule

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Off-road Equipment - Applicant provided construction equipment list and schedule

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT - All trips entered into EMFAC2021

Demolition - Estimated from GoogleEarth

Grading - Model defaults

Vehicle Trips - default

Woodstoves - No Hearth

Energy Use - all electric with solar generation and battery storage

Water And Wastewater - WTP treatment

Construction Off-road Equipment Mitigation - BMPs and Tier 4i

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Vehicle Emission Factors - Emission factors from EMFAC2021

Fleet Mix - Fleet mix from EMFAC2021

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00

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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	230.00	300.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	8.00	20.00
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	5.00	10.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	T24NG	14,104.62	0.00
tblEnergyUse	T24NG	23,474.54	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00

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tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	3.60	0.00
tblFireplaces	NumberGas	8.75	0.00
tblFireplaces	NumberNoFireplace	0.96	0.00
tblFireplaces	NumberNoFireplace	2.80	0.00
tblFireplaces	NumberWood	4.08	0.00
tblFireplaces	NumberWood	15.05	0.00
tblFleetMix	HHD	6.6660e-003	8.7314e-003
tblFleetMix	HHD	6.6660e-003	8.7314e-003
tblFleetMix	HHD	6.6660e-003	8.7314e-003
tblFleetMix	LDA	0.58	0.49
tblFleetMix	LDA	0.58	0.49
tblFleetMix	LDA	0.58	0.49
tblFleetMix	LDT1	0.05	0.04
tblFleetMix	LDT1	0.05	0.04
tblFleetMix	LDT1	0.05	0.04
tblFleetMix	LDT2	0.16	0.22
tblFleetMix	LDT2	0.16	0.22
tblFleetMix	LDT2	0.16	0.22
tblFleetMix	LHD1	0.03	0.04
tblFleetMix	LHD1	0.03	0.04
tblFleetMix	LHD1	0.03	0.04
tblFleetMix	LHD2	7.4690e-003	0.01
tblFleetMix	LHD2	7.4690e-003	0.01
tblFleetMix	LHD2	7.4690e-003	0.01
tblFleetMix	MCY	0.03	0.03
tblFleetMix	MCY	0.03	0.03

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tblFleetMix	MCY	0.03	0.03
tblFleetMix	MDV	0.11	0.14
tblFleetMix	MDV	0.11	0.14
tblFleetMix	MDV	0.11	0.14
tblFleetMix	MH	3.2790e-003	3.8194e-003
tblFleetMix	MH	3.2790e-003	3.8194e-003
tblFleetMix	MH	3.2790e-003	3.8194e-003
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.0800e-003	9.8714e-004
tblFleetMix	OBUS	1.0800e-003	9.8714e-004
tblFleetMix	OBUS	1.0800e-003	9.8714e-004
tblFleetMix	SBUS	1.4780e-003	1.5469e-003
tblFleetMix	SBUS	1.4780e-003	1.5469e-003
tblFleetMix	SBUS	1.4780e-003	1.5469e-003
tblFleetMix	UBUS	2.7300e-004	4.2841e-004
tblFleetMix	UBUS	2.7300e-004	4.2841e-004
tblFleetMix	UBUS	2.7300e-004	4.2841e-004
tblLandUse	LandUseSquareFeet	24,000.00	35,160.00
tblLandUse	LandUseSquareFeet	63,000.00	51,275.00
tblLandUse	LotAcreage	0.75	0.00
tblLandUse	LotAcreage	1.50	0.00
tblLandUse	LotAcreage	11.36	4.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	10.00	0.00
tblTripsAndVMT	VendorTripNumber	12.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	44.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	9.00	0.00
tblVehicleEF	HHD	0.02	0.16
tblVehicleEF	HHD	0.05	0.05
tblVehicleEF	HHD	0.00	3.8254e-008
tblVehicleEF	HHD	5.32	4.50
tblVehicleEF	HHD	0.44	0.50
tblVehicleEF	HHD	8.8140e-003	1.0176e-003
tblVehicleEF	HHD	799.72	667.01
tblVehicleEF	HHD	1,274.41	1,456.96

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tblVehicleEF	HHD	0.10	0.01
tblVehicleEF	HHD	0.13	0.11
tblVehicleEF	HHD	0.20	0.23
tblVehicleEF	HHD	0.00	1.2222e-007
tblVehicleEF	HHD	4.53	3.58
tblVehicleEF	HHD	2.56	1.63
tblVehicleEF	HHD	2.87	2.64
tblVehicleEF	HHD	2.1180e-003	1.9491e-003
tblVehicleEF	HHD	0.06	0.08
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	1.7483e-007
tblVehicleEF	HHD	2.0270e-003	1.8595e-003
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	8.4640e-003	8.4789e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.0000e-006	1.6075e-007
tblVehicleEF	HHD	3.0000e-006	5.3123e-005
tblVehicleEF	HHD	1.6400e-004	1.4601e-005
tblVehicleEF	HHD	0.36	0.28
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	8.7000e-005	1.3373e-004
tblVehicleEF	HHD	2.0000e-006	2.0719e-007
tblVehicleEF	HHD	7.4340e-003	5.8092e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	1.0000e-006	1.2046e-007
tblVehicleEF	HHD	3.0000e-006	5.3123e-005
tblVehicleEF	HHD	1.6400e-004	1.4601e-005

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tblVehicleEF	HHD	0.41	0.47
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	0.08	0.07
tblVehicleEF	HHD	8.7000e-005	1.3373e-004
tblVehicleEF	HHD	2.0000e-006	2.2684e-007
tblVehicleEF	LDA	1.2000e-003	1.4857e-003
tblVehicleEF	LDA	0.03	0.05
tblVehicleEF	LDA	0.44	0.54
tblVehicleEF	LDA	1.82	2.36
tblVehicleEF	LDA	221.97	223.71
tblVehicleEF	LDA	46.14	58.17
tblVehicleEF	LDA	3.5250e-003	3.5720e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.14	0.20
tblVehicleEF	LDA	0.04	8.2561e-003
tblVehicleEF	LDA	8.0000e-003	8.0000e-003
tblVehicleEF	LDA	1.0760e-003	9.3048e-004
tblVehicleEF	LDA	1.3650e-003	1.5720e-003
tblVehicleEF	LDA	0.02	2.8896e-003
tblVehicleEF	LDA	2.0000e-003	2.0000e-003
tblVehicleEF	LDA	9.9100e-004	8.5632e-004
tblVehicleEF	LDA	1.2550e-003	1.4454e-003
tblVehicleEF	LDA	0.03	0.27
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.02	0.00
tblVehicleEF	LDA	4.2650e-003	5.3607e-003
tblVehicleEF	LDA	0.03	0.20
tblVehicleEF	LDA	0.13	0.23

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tblVehicleEF	LDA	2.0530e-003	2.2114e-003
tblVehicleEF	LDA	4.2700e-004	5.7503e-004
tblVehicleEF	LDA	0.03	0.27
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.02	0.00
tblVehicleEF	LDA	6.1890e-003	7.8090e-003
tblVehicleEF	LDA	0.03	0.20
tblVehicleEF	LDA	0.15	0.25
tblVehicleEF	LDT1	2.6560e-003	5.0384e-003
tblVehicleEF	LDT1	0.05	0.10
tblVehicleEF	LDT1	0.69	1.23
tblVehicleEF	LDT1	2.02	4.98
tblVehicleEF	LDT1	271.84	305.46
tblVehicleEF	LDT1	57.89	82.23
tblVehicleEF	LDT1	4.8290e-003	8.0628e-003
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.05	0.10
tblVehicleEF	LDT1	0.19	0.36
tblVehicleEF	LDT1	0.04	0.01
tblVehicleEF	LDT1	8.0000e-003	8.0000e-003
tblVehicleEF	LDT1	1.3010e-003	1.6084e-003
tblVehicleEF	LDT1	1.7030e-003	2.6358e-003
tblVehicleEF	LDT1	0.02	3.7397e-003
tblVehicleEF	LDT1	2.0000e-003	2.0000e-003
tblVehicleEF	LDT1	1.1960e-003	1.4789e-003
tblVehicleEF	LDT1	1.5660e-003	2.4235e-003
tblVehicleEF	LDT1	0.07	0.71
tblVehicleEF	LDT1	0.16	0.18
tblVehicleEF	LDT1	0.06	0.00

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tblVehicleEF	LDT1	0.01	0.02
tblVehicleEF	LDT1	0.09	0.54
tblVehicleEF	LDT1	0.22	0.50
tblVehicleEF	LDT1	2.5140e-003	3.0198e-003
tblVehicleEF	LDT1	5.3500e-004	8.1288e-004
tblVehicleEF	LDT1	0.07	0.71
tblVehicleEF	LDT1	0.16	0.18
tblVehicleEF	LDT1	0.06	0.00
tblVehicleEF	LDT1	0.02	0.03
tblVehicleEF	LDT1	0.09	0.54
tblVehicleEF	LDT1	0.25	0.55
tblVehicleEF	LDT2	2.1940e-003	2.1915e-003
tblVehicleEF	LDT2	0.05	0.07
tblVehicleEF	LDT2	0.62	0.71
tblVehicleEF	LDT2	2.44	3.13
tblVehicleEF	LDT2	278.26	307.92
tblVehicleEF	LDT2	59.60	79.30
tblVehicleEF	LDT2	4.6490e-003	5.0580e-003
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.20	0.28
tblVehicleEF	LDT2	0.04	0.01
tblVehicleEF	LDT2	8.0000e-003	8.0000e-003
tblVehicleEF	LDT2	1.1660e-003	1.0890e-003
tblVehicleEF	LDT2	1.4450e-003	1.7718e-003
tblVehicleEF	LDT2	0.02	3.5567e-003
tblVehicleEF	LDT2	2.0000e-003	2.0000e-003
tblVehicleEF	LDT2	1.0730e-003	1.0020e-003
tblVehicleEF	LDT2	1.3290e-003	1.6291e-003

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tblVehicleEF	LDT2	0.06	0.31
tblVehicleEF	LDT2	0.12	0.08
tblVehicleEF	LDT2	0.05	0.00
tblVehicleEF	LDT2	8.7250e-003	8.3290e-003
tblVehicleEF	LDT2	0.07	0.23
tblVehicleEF	LDT2	0.22	0.31
tblVehicleEF	LDT2	2.5730e-003	3.0436e-003
tblVehicleEF	LDT2	5.5100e-004	7.8400e-004
tblVehicleEF	LDT2	0.06	0.31
tblVehicleEF	LDT2	0.12	0.08
tblVehicleEF	LDT2	0.05	0.00
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.07	0.23
tblVehicleEF	LDT2	0.24	0.34
tblVehicleEF	LHD1	3.7420e-003	4.0019e-003
tblVehicleEF	LHD1	7.9950e-003	7.5020e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.16	0.17
tblVehicleEF	LHD1	0.79	0.78
tblVehicleEF	LHD1	0.86	1.72
tblVehicleEF	LHD1	9.02	8.78
tblVehicleEF	LHD1	706.55	705.59
tblVehicleEF	LHD1	8.92	13.80
tblVehicleEF	LHD1	9.1700e-004	8.2570e-004
tblVehicleEF	LHD1	0.05	0.05
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.95	0.87
tblVehicleEF	LHD1	0.22	0.32

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tblVehicleEF	LHD1	1.1020e-003	9.4806e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	0.01	9.8072e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	2.2300e-004	1.7489e-004
tblVehicleEF	LHD1	1.0540e-003	9.0704e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.5420e-003	2.4518e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	2.0500e-004	1.6080e-004
tblVehicleEF	LHD1	1.8450e-003	0.11
tblVehicleEF	LHD1	0.09	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	9.4800e-004	0.00
tblVehicleEF	LHD1	0.11	0.10
tblVehicleEF	LHD1	0.36	0.16
tblVehicleEF	LHD1	0.05	0.08
tblVehicleEF	LHD1	8.7000e-005	8.4879e-005
tblVehicleEF	LHD1	6.8670e-003	6.8572e-003
tblVehicleEF	LHD1	8.8000e-005	1.3647e-004
tblVehicleEF	LHD1	1.8450e-003	0.11
tblVehicleEF	LHD1	0.09	0.03
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	9.4800e-004	0.00
tblVehicleEF	LHD1	0.13	0.12
tblVehicleEF	LHD1	0.36	0.16
tblVehicleEF	LHD1	0.06	0.09
tblVehicleEF	LHD2	2.5350e-003	2.5988e-003
tblVehicleEF	LHD2	6.3230e-003	6.0211e-003

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tblVehicleEF	LHD2	5.7120e-003	9.2616e-003
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.63	0.50
tblVehicleEF	LHD2	0.46	0.99
tblVehicleEF	LHD2	14.12	14.23
tblVehicleEF	LHD2	710.65	775.46
tblVehicleEF	LHD2	6.14	7.99
tblVehicleEF	LHD2	1.8570e-003	1.8460e-003
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.10	0.11
tblVehicleEF	LHD2	0.86	0.89
tblVehicleEF	LHD2	0.14	0.19
tblVehicleEF	LHD2	1.5620e-003	1.5204e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.03
tblVehicleEF	LHD2	9.2000e-005	5.5265e-005
tblVehicleEF	LHD2	1.4950e-003	1.4547e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.7310e-003	2.6814e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	8.5000e-005	5.0814e-005
tblVehicleEF	LHD2	7.2900e-004	0.05
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.3600e-004	0.00
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	0.08	0.07

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tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	1.3500e-004	1.3604e-004
tblVehicleEF	LHD2	6.8450e-003	7.4534e-003
tblVehicleEF	LHD2	6.1000e-005	7.8963e-005
tblVehicleEF	LHD2	7.2900e-004	0.05
tblVehicleEF	LHD2	0.03	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.3600e-004	0.00
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.08	0.07
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	MCY	0.35	0.17
tblVehicleEF	MCY	0.26	0.19
tblVehicleEF	MCY	19.65	13.63
tblVehicleEF	MCY	9.37	8.60
tblVehicleEF	MCY	216.84	188.90
tblVehicleEF	MCY	61.60	50.69
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	8.3204e-003
tblVehicleEF	MCY	1.18	0.60
tblVehicleEF	MCY	0.27	0.14
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	4.0000e-003	4.0000e-003
tblVehicleEF	MCY	2.2560e-003	2.0090e-003
tblVehicleEF	MCY	2.8450e-003	3.3552e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	2.1060e-003	1.8782e-003
tblVehicleEF	MCY	2.6700e-003	3.1503e-003
tblVehicleEF	MCY	0.88	4.99

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tblVehicleEF	MCY	0.79	3.56
tblVehicleEF	MCY	0.45	0.00
tblVehicleEF	MCY	2.37	1.14
tblVehicleEF	MCY	0.60	3.99
tblVehicleEF	MCY	2.00	1.45
tblVehicleEF	MCY	2.1460e-003	1.8675e-003
tblVehicleEF	MCY	6.1000e-004	5.0113e-004
tblVehicleEF	MCY	0.88	0.13
tblVehicleEF	MCY	0.79	3.56
tblVehicleEF	MCY	0.45	0.00
tblVehicleEF	MCY	2.95	1.37
tblVehicleEF	MCY	0.60	3.99
tblVehicleEF	MCY	2.17	1.58
tblVehicleEF	MDV	2.3680e-003	2.6232e-003
tblVehicleEF	MDV	0.05	0.08
tblVehicleEF	MDV	0.63	0.77
tblVehicleEF	MDV	2.59	3.42
tblVehicleEF	MDV	340.38	372.69
tblVehicleEF	MDV	72.41	95.79
tblVehicleEF	MDV	6.1680e-003	6.5793e-003
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.23	0.34
tblVehicleEF	MDV	0.04	0.01
tblVehicleEF	MDV	8.0000e-003	8.0000e-003
tblVehicleEF	MDV	1.1840e-003	1.1417e-003
tblVehicleEF	MDV	1.4920e-003	1.8440e-003
tblVehicleEF	MDV	0.02	3.6152e-003
tblVehicleEF	MDV	2.0000e-003	2.0000e-003

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tblVehicleEF	MDV	1.0920e-003	1.0529e-003
tblVehicleEF	MDV	1.3720e-003	1.6955e-003
tblVehicleEF	MDV	0.07	0.40
tblVehicleEF	MDV	0.15	0.10
tblVehicleEF	MDV	0.07	0.00
tblVehicleEF	MDV	9.7310e-003	0.01
tblVehicleEF	MDV	0.08	0.30
tblVehicleEF	MDV	0.26	0.40
tblVehicleEF	MDV	3.1500e-003	3.6817e-003
tblVehicleEF	MDV	6.7000e-004	9.4701e-004
tblVehicleEF	MDV	0.07	0.40
tblVehicleEF	MDV	0.15	0.10
tblVehicleEF	MDV	0.07	0.00
tblVehicleEF	MDV	0.01	0.02
tblVehicleEF	MDV	0.08	0.30
tblVehicleEF	MDV	0.29	0.43
tblVehicleEF	MH	6.5260e-003	7.6380e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.46	0.52
tblVehicleEF	MH	1.64	1.85
tblVehicleEF	MH	1,387.36	1,603.71
tblVehicleEF	MH	15.21	18.39
tblVehicleEF	MH	0.06	0.08
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.56	1.83
tblVehicleEF	MH	0.24	0.30
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.03	0.04

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tblVehicleEF	MH	1.9100e-004	2.0824e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.3360e-003	3.3960e-003
tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	1.7600e-004	1.9146e-004
tblVehicleEF	MH	0.45	25.26
tblVehicleEF	MH	0.04	6.00
tblVehicleEF	MH	0.18	0.00
tblVehicleEF	MH	0.06	0.07
tblVehicleEF	MH	9.4360e-003	0.15
tblVehicleEF	MH	0.08	0.09
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.5100e-004	1.8178e-004
tblVehicleEF	MH	0.45	25.26
tblVehicleEF	MH	0.04	6.00
tblVehicleEF	MH	0.18	0.00
tblVehicleEF	MH	0.07	0.09
tblVehicleEF	MH	9.4360e-003	0.15
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MHD	2.2510e-003	0.01
tblVehicleEF	MHD	9.3200e-004	7.5480e-003
tblVehicleEF	MHD	5.1670e-003	5.6670e-003
tblVehicleEF	MHD	0.33	0.63
tblVehicleEF	MHD	0.15	0.15
tblVehicleEF	MHD	0.58	0.64
tblVehicleEF	MHD	63.79	151.67
tblVehicleEF	MHD	948.94	1,064.95
tblVehicleEF	MHD	5.12	5.75
tblVehicleEF	MHD	9.5220e-003	0.02

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tblVehicleEF	MHD	0.13	0.14
tblVehicleEF	MHD	4.3630e-003	3.9186e-003
tblVehicleEF	MHD	0.34	0.77
tblVehicleEF	MHD	1.53	0.62
tblVehicleEF	MHD	1.88	1.32
tblVehicleEF	MHD	1.5400e-004	6.5218e-004
tblVehicleEF	MHD	0.13	0.04
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	7.6150e-003	5.5092e-003
tblVehicleEF	MHD	6.5000e-005	6.9522e-005
tblVehicleEF	MHD	1.4700e-004	6.2348e-004
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	3.0000e-003	3.0000e-003
tblVehicleEF	MHD	7.2820e-003	5.2653e-003
tblVehicleEF	MHD	6.0000e-005	6.3923e-005
tblVehicleEF	MHD	2.1800e-004	0.02
tblVehicleEF	MHD	0.01	3.5595e-003
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	1.2500e-004	0.00
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	MHD	6.0400e-004	1.4075e-003
tblVehicleEF	MHD	9.0150e-003	0.01
tblVehicleEF	MHD	5.1000e-005	5.6852e-005
tblVehicleEF	MHD	2.1800e-004	0.02
tblVehicleEF	MHD	0.01	3.5595e-003
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	1.2500e-004	0.00

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tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	OBUS	6.8350e-003	7.8957e-003
tblVehicleEF	OBUS	2.7460e-003	0.01
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.72	0.67
tblVehicleEF	OBUS	0.35	0.49
tblVehicleEF	OBUS	1.76	2.16
tblVehicleEF	OBUS	110.91	102.09
tblVehicleEF	OBUS	1,190.08	1,369.24
tblVehicleEF	OBUS	13.53	16.41
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.13	0.15
tblVehicleEF	OBUS	0.01	0.02
tblVehicleEF	OBUS	0.50	0.37
tblVehicleEF	OBUS	1.54	1.03
tblVehicleEF	OBUS	1.21	0.88
tblVehicleEF	OBUS	1.6700e-004	3.9196e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	8.4550e-003	0.02
tblVehicleEF	OBUS	1.6400e-004	1.8768e-004
tblVehicleEF	OBUS	1.6000e-004	3.7493e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	3.0000e-003	3.0000e-003
tblVehicleEF	OBUS	8.0770e-003	0.02
tblVehicleEF	OBUS	1.5100e-004	1.7256e-004
tblVehicleEF	OBUS	1.3560e-003	0.10

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tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.05
tblVehicleEF	OBUS	6.0100e-004	0.00
tblVehicleEF	OBUS	0.02	0.05
tblVehicleEF	OBUS	0.07	0.11
tblVehicleEF	OBUS	0.08	0.11
tblVehicleEF	OBUS	1.0520e-003	9.6663e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.3400e-004	1.6224e-004
tblVehicleEF	OBUS	1.3560e-003	0.10
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.07	0.07
tblVehicleEF	OBUS	6.0100e-004	0.00
tblVehicleEF	OBUS	0.03	0.07
tblVehicleEF	OBUS	0.07	0.11
tblVehicleEF	OBUS	0.09	0.12
tblVehicleEF	SBUS	0.04	0.09
tblVehicleEF	SBUS	3.7660e-003	0.18
tblVehicleEF	SBUS	3.2710e-003	2.6836e-003
tblVehicleEF	SBUS	1.84	1.19
tblVehicleEF	SBUS	0.30	0.82
tblVehicleEF	SBUS	0.46	0.35
tblVehicleEF	SBUS	325.82	172.93
tblVehicleEF	SBUS	1,016.49	1,011.56
tblVehicleEF	SBUS	2.64	2.14
tblVehicleEF	SBUS	0.05	0.02
tblVehicleEF	SBUS	0.14	0.13
tblVehicleEF	SBUS	3.4900e-003	3.0388e-003
tblVehicleEF	SBUS	2.68	1.13

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tblVehicleEF	SBUS	3.29	1.75
tblVehicleEF	SBUS	1.25	0.47
tblVehicleEF	SBUS	1.8010e-003	7.4860e-004
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	3.6000e-005	2.4071e-005
tblVehicleEF	SBUS	1.7230e-003	7.1423e-004
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.7960e-003	2.7361e-003
tblVehicleEF	SBUS	0.02	9.8802e-003
tblVehicleEF	SBUS	3.3000e-005	2.2132e-005
tblVehicleEF	SBUS	4.1400e-004	0.02
tblVehicleEF	SBUS	4.2990e-003	5.6152e-003
tblVehicleEF	SBUS	0.18	0.11
tblVehicleEF	SBUS	2.0100e-004	0.00
tblVehicleEF	SBUS	0.06	0.04
tblVehicleEF	SBUS	9.3040e-003	0.02
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	3.0940e-003	1.4801e-003
tblVehicleEF	SBUS	9.6770e-003	9.0480e-003
tblVehicleEF	SBUS	2.6000e-005	2.1189e-005
tblVehicleEF	SBUS	4.1400e-004	0.02
tblVehicleEF	SBUS	4.2990e-003	5.6152e-003
tblVehicleEF	SBUS	0.25	0.23
tblVehicleEF	SBUS	2.0100e-004	0.00
tblVehicleEF	SBUS	0.07	0.23
tblVehicleEF	SBUS	9.3040e-003	0.02
tblVehicleEF	SBUS	0.02	0.02

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tblVehicleEF	UBUS	1.71	0.64
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	12.99	7.76
tblVehicleEF	UBUS	0.84	2.45
tblVehicleEF	UBUS	1,646.36	1,027.95
tblVehicleEF	UBUS	7.79	19.10
tblVehicleEF	UBUS	0.27	0.13
tblVehicleEF	UBUS	6.8450e-003	0.02
tblVehicleEF	UBUS	0.67	0.20
tblVehicleEF	UBUS	0.08	0.17
tblVehicleEF	UBUS	0.08	0.13
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	4.8850e-003	3.3910e-003
tblVehicleEF	UBUS	8.8000e-005	1.2892e-004
tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	7.7720e-003	0.01
tblVehicleEF	UBUS	4.6670e-003	3.2314e-003
tblVehicleEF	UBUS	8.1000e-005	1.1854e-004
tblVehicleEF	UBUS	2.4900e-004	0.03
tblVehicleEF	UBUS	3.6220e-003	9.4369e-003
tblVehicleEF	UBUS	1.4800e-004	0.00
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	8.6800e-004	0.03
tblVehicleEF	UBUS	0.05	0.08
tblVehicleEF	UBUS	0.01	7.6069e-003
tblVehicleEF	UBUS	7.7000e-005	1.8885e-004
tblVehicleEF	UBUS	2.4900e-004	0.03
tblVehicleEF	UBUS	3.6220e-003	9.4369e-003
tblVehicleEF	UBUS	1.4800e-004	0.00

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tblVehicleEF	UBUS	1.75	0.69
tblVehicleEF	UBUS	8.6800e-004	0.03
tblVehicleEF	UBUS	0.05	0.09
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	0.48	0.00
tblWoodstoves	NumberCatalytic	1.40	0.00
tblWoodstoves	NumberNoncatalytic	0.48	0.00
tblWoodstoves	NumberNoncatalytic	1.40	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	21.06	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	tons/yr										MT/yr					
Area	0.4143	5.0400e-003	0.4369	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.8000e-004	0.0000	0.7327
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	21.2532	21.2532	5.8500e-003	7.1000e-004	21.6105
Mobile	0.3254	0.2411	1.8558	4.2100e-003	0.3921	3.6100e-003	0.3957	0.0982	3.4000e-003	0.1016	0.0000	389.7689	389.7689	0.0208	0.0213	396.6306
Waste						0.0000	0.0000		0.0000	0.0000	10.7666	0.0000	10.7666	0.6363	0.0000	26.6739
Water						0.0000	0.0000		0.0000	0.0000	1.3600	1.5936	2.9537	5.1200e-003	3.0100e-003	3.9789
Total	**0.7397**	**0.2462**	**2.2927**	**4.2300e-003**	**0.3921**	**6.0400e-003**	**0.3981**	**0.0982**	**5.8300e-003**	**0.1040**	**12.1267**	**413.3313**	**425.4580**	**0.6687**	**0.0250**	**449.6265**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4143	5.0400e-003	0.4369	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.8000e-004	0.0000	0.7327
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	21.2532	21.2532	5.8500e-003	7.1000e-004	21.6105
Mobile	0.3254	0.2411	1.8558	4.2100e-003	0.3921	3.6100e-003	0.3957	0.0982	3.4000e-003	0.1016	0.0000	389.7689	389.7689	0.0208	0.0213	396.6306
Waste						0.0000	0.0000		0.0000	0.0000	10.7666	0.0000	10.7666	0.6363	0.0000	26.6739
Water						0.0000	0.0000		0.0000	0.0000	1.0880	1.3391	2.4271	4.1100e-003	2.4100e-003	3.2483
Total	**0.7397**	**0.2462**	**2.2927**	**4.2300e-003**	**0.3921**	**6.0400e-003**	**0.3981**	**0.0982**	**5.8300e-003**	**0.1040**	**11.8547**	**413.0767**	**424.9314**	**0.6677**	**0.0244**	**448.8960**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.24**	**0.06**	**0.12**	**0.15**	**2.40**	**0.16**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3254	0.2411	1.8558	4.2100e-003	0.3921	3.6100e-003	0.3957	0.0982	3.4000e-003	0.1016	0.0000	389.7689	389.7689	0.0208	0.0213	396.6306
Unmitigated	0.3254	0.2411	1.8558	4.2100e-003	0.3921	3.6100e-003	0.3957	0.0982	3.4000e-003	0.1016	0.0000	389.7689	389.7689	0.0208	0.0213	396.6306

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	175.68	195.36	150.72	404,010	404,010
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	330.40	333.90	299.25	753,971	753,971
Total	506.08	529.26	449.97	1,157,981	1,157,981

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.491083	0.041177	0.215613	0.139447	0.040042	0.010980	0.019187	0.008731	0.000987	0.000428	0.026958	0.001547	0.003819
Other Asphalt Surfaces	0.491083	0.041177	0.215613	0.139447	0.040042	0.010980	0.019187	0.008731	0.000987	0.000428	0.026958	0.001547	0.003819
Single Family Housing	0.491083	0.041177	0.215613	0.139447	0.040042	0.010980	0.019187	0.008731	0.000987	0.000428	0.026958	0.001547	0.003819

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	21.2532	21.2532	5.8500e-003	7.1000e-004	21.6105
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	21.2532	21.2532	5.8500e-003	7.1000e-004	21.6105
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	116363	6.3327	1.7400e-003	2.1000e-004	6.4392
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	274163	14.9205	4.1000e-003	5.0000e-004	15.1713
Total		**21.2532**	**5.8400e-003**	**7.1000e-004**	**21.6105**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	116363	6.3327	1.7400e-003	2.1000e-004	6.4392
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	274163	14.9205	4.1000e-003	5.0000e-004	15.1713
Total		**21.2532**	**5.8400e-003**	**7.1000e-004**	**21.6105**

6.0 Area Detail

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4143	5.0400e-003	0.4369	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.8000e-004	0.0000	0.7327
Unmitigated	0.4143	5.0400e-003	0.4369	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.8000e-004	0.0000	0.7327

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0615					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0131	5.0400e-003	0.4369	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.8000e-004	0.0000	0.7327
Total	**0.4143**	**5.0400e-003**	**0.4369**	**2.0000e-005**		**2.4300e-003**	**2.4300e-003**		**2.4300e-003**	**2.4300e-003**	**0.0000**	**0.7156**	**0.7156**	**6.8000e-004**	**0.0000**	**0.7327**

Creekwood Subdivision, Petaluma - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0615					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0131	5.0400e-003	0.4369	2.0000e-005		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	0.7156	0.7156	6.8000e-004	0.0000	0.7327
Total	**0.4143**	**5.0400e-003**	**0.4369**	**2.0000e-005**		**2.4300e-003**	**2.4300e-003**		**2.4300e-003**	**2.4300e-003**	**0.0000**	**0.7156**	**0.7156**	**6.8000e-004**	**0.0000**	**0.7327**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.4271	4.1100e-003	2.4100e-003	3.2483
Unmitigated	2.9537	5.1200e-003	3.0100e-003	3.9789

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.5637 / 0.985809	1.2015	2.0800e-003	1.2200e-003	1.6185
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.28039 / 1.43764	1.7522	3.0400e-003	1.7900e-003	2.3603
Total		**2.9537**	**5.1200e-003**	**3.0100e-003**	**3.9789**

Mitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.25096 / 0.925674	0.9873	1.6700e-003	9.8000e-004	1.3214
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.82431 / 1.34994	1.4398	2.4400e-003	1.4300e-003	1.9270
Total		**2.4271**	**4.1100e-003**	**2.4100e-003**	**3.2483**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.7666	0.6363	0.0000	26.6739
Unmitigated	10.7666	0.6363	0.0000	26.6739

8.2 Waste by Land Use

Date: 1/21/2022 10:33 AM

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	11.04	2.2410	0.1324	0.0000	5.5520
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	42	8.5256	0.5039	0.0000	21.1219
Total		**10.7666**	**0.6363**	**0.0000**	**26.6739**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	11.04	2.2410	0.1324	0.0000	5.5520
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	42	8.5256	0.5039	0.0000	21.1219
Total		**10.7666**	**0.6363**	**0.0000**	**26.6739**

Creekwood Subdivision, Petaluma - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3: EMFAC2021 Calculations

Summary of Construction Traffic Emissions (EMFAC2021)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2	CH4	N2O	CO2e
					Tons							*Metric Tons*		
Criteria Pollutants														
2023	0.0204	0.0920	0.2185	0.0008	0.0435	0.0060	0.0495	0.0066	0.0025	0.0090	78.3087	0.0032	0.0082	80.8415
2024	0.0102	0.0466	0.1081	0.0004	0.0231	0.0031	0.0263	0.0035	0.0013	0.0048	40.9355	0.0016	0.0043	42.2541
Toxic Air Contaminants (1.0 Mile Trip Length)														
2023	0.0173	0.0268	0.0779	0.0001	0.0041	0.0006	0.0047	0.0006	0.0003	0.0009	9.6712	0.0015	0.0014	10.1137
2024	0.0087	0.0139	0.0389	0.0001	0.0022	0.0003	0.0025	0.0003	0.0001	0.0005	5.0556	0.0007	0.0007	5.2852

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	8	0	80	0	10	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	864	0	200
Site Preparation	20	0	200	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	2160	0	0
Grading	20	0	400	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	4320	0	0
Trenching/Foundation	5	0	295	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	3186	0	0
Paving	18	0	360	0	77	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	3888	0	1540
Building Construction	44	12	13200	3600	768	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	142560	26280	15360
Architectural Coating	9	0	180	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1944	0	0

Number of Days Per Year					
2023	1/1/23	12/31/23	365	261	
2024	1/1/24	7/12/24	194	139	
			559	**400**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	1/1/2023	1/13/2023	5	10
Site Preparation	1/14/2023	1/27/2023	5	10
Grading	1/28/2023	2/24/2023	5	20
Trenching/Foundation	2/10/2023	5/3/2023	5	59
Paving	5/18/2024	6/14/2024	5	20
Building Construction	3/25/2023	5/17/2024	5	300
Architectural Coating	6/15/2024	7/12/2024	5	20

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Sonoma
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_DIU	PM2.5_TIR	PM10_RUI	PM10_IDL	PM10_STR	PM10_DIU	PM10_TIR	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNL	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Sonoma	2023	HHDT	Aggregate	Aggregate	Gasoline	2.141088	64.14979	64.14979	0	42.83888	19.37457	0	1.966145	0.006267	0	0.002171	0.005	0.038744	0.006816	0	0.002361	0.02	0.110698	2630.84	0	50.44989	0.651889	0	5.88E-05	0.433617	0	0.035297	4.293194	0	0.000319	0.142497	1.30458	9.983974	6.264619	0	0.000349	0.142497	1.30458	9.983974	0.039278	149.6621	0	1.065876	0.026009	0	0.000499
Sonoma	2023	HHDT	Aggregate	Aggregate	Diesel	2320.139	228314.9	228314.9	0	27466	2.330147	48.96902	2.833808	0.024797	0.038402	0	0.008449	0.027656	0.025918	0.040138	0	0.033796	0.079018	1728.768	9030.512	0	0.001018	0.173775	0	0.272368	1.422761	0	0.021921	3.741321	0	0	0	0	0.024955	4.259209	0	0	0	0	0.210382	0.107523	53.12134	0	0.01637	0.085514	0
Sonoma	2023	HHDT	Aggregate	Aggregate	Electricity	1.429585	82.30065	0	82.30065	19.6434	0	0	0	0	0	0	0	0	0.008514	0.012976	0	0	0	0.034058	0.037075	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2023	HHDT	Aggregate	Aggregate	Natural Ga	161.9892	10833.92	10833.92	0	1287.202	0.903632	11.15328	0	0.002247	0.019616	0	0.009	0.048901	0.002444	0.021334	0	0.036	0.139717	1391.284	9052.592	0	1.426623	29.29621	0	0.283622	1.84543	0	0.047284	0.467016	0	0	0	0	1.486622	29.95411	0	0	0	0	0.839097	10.20041	65.66352	0	0	0	0	0	0
Sonoma	2023	LDA	Aggregate	Aggregate	Gasoline	140201.8	5262439	5262439	0	644521.6	0.059295	0	0.298414	0.001297	0	0.002079	0.002	0.003109	0.00141	0	0.002261	0.008	0.008884	283.822	0	73.43119	0.003214	0	0.084911	0.005776	0	0.035708	0.01303	0	0.403668	0.1081	0.288581	1.706309	0.019006	0	0.441964	0.1081	0.288581	1.706309	0.033404	0.905729	0	3.899936	0.002806	0	0.000726
Sonoma	2023	LDA	Aggregate	Aggregate	Diesel	988.5041	29470.85	29470.85	0	4150.248	0.348209	0	0	0.023129	0	0	0.002	0.003165	0.024174	0	0	0.008	0.009044	243.1248	0	0	0.001765	0	0	0.038304	0	0	0.037998	0	0	0	0	0	0.042358	0	0	0	0	0	0.0031	0.418295	0	0	0.002304	0	0	0
Sonoma	2023	LDA	Aggregate	Aggregate	Electricity	7093.829	326993.1	0	326993.1	35219.64	0	0	0	0	0	0	0.002	0.00153	0	0	0	0.008	0.004373	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2023	LDA	Aggregate	Aggregate	Plug-in Hyb	3231.76	148549.2	75529.18	73020.03	13363.33	0.003518	0	0.117555	0.000668	0	0.002106	0.002	0.001446	0.000727	0	0.00229	0.008	0.004132	145.3185	0	66.59465	0.000478	0	0.043969	0.000638	0	0.021285	0.001512	0	0.178903	0.041374	0.036838	0.442702	0.002207	0	0.195877	0.041374	0.036838	0.442702	0.019437	0.226042	0	1.393491	0.001437	0	0.000658
Sonoma	2023	LDT1	Aggregate	Aggregate	Gasoline	19002.79	581600.4	581600.4	0	81413.11	0.214532	0	0.531559	0.002328	0	0.003594	0.002	0.00378	0.002531	0	0.003908	0.008	0.0108	340.723	0	95.13331	0.01025	0	0.149079	0.014183	0	0.045489	0.04733	0	0.819082	0.248036	0.75551	3.91471	0.063041	0	0.896789	0.248036	0.75551	3.91471	0.03709	2.144812	0	8.002679	0.003368	0	0.00094
Sonoma	2023	LDT1	Aggregate	Aggregate	Diesel	22.87057	279.8337	279.8337	0	65.83652	1.639477	0	0	0.246551	0	0	0.002	0.004257	0.257699	0	0	0.008	0.012163	422.4502	0	0	0.014401	0	0	0.066557	0	0	0.310042	0	0	0	0	0	0.352962	0	0	0	0	0	0.0031	1.629464	0	0	0.004003	0	0	0
Sonoma	2023	LDT1	Aggregate	Aggregate	Electricity	32.19966	1244.43	0	1244.43	151.0795	0	0	0	0	0	0	0.002	0.001539	0	0	0	0.008	0.004398	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2023	LDT1	Aggregate	Aggregate	Plug-in Hyb	8.801713	439.4297	202.9572	236.4725	36.39509	0.003195	0	0.117545	0.000407	0	0.001429	0.002	0.001449	0.000443	0	0.001554	0.008	0.00414	132.016	0	72.57405	0.000433	0	0.0439	0.000577	0	0.021227	0.001374	0	0.178878	0.024509	0.021944	0.281269	0.002005	0	0.195848	0.024509	0.021944	0.281269	0.019398	0.205393	0	1.393244	0.001305	0	0.000717
Sonoma	2023	LDT2	Aggregate	Aggregate	Gasoline	68762.84	2538989	2538989	0	318047.7	0.096569	0	0.409699	0.001367	0	0.002108	0.002	0.003602	0.001486	0	0.002292	0.008	0.01029	354.3607	0	92.63473	0.003763	0	0.098861	0.007416	0	0.041318	0.015538	0	0.477377	0.10059	0.27602	1.65078	0.02267	0	0.522667	0.10059	0.27602	1.65078	0.034848	1.027786	0	4.510024	0.003503	0	0.000916
Sonoma	2023	LDT2	Aggregate	Aggregate	Diesel	299.0973	11473.63	11473.63	0	1402.417	0.073359	0	0	0.00763	0	0	0.002	0.003599	0.007975	0	0	0.008	0.010284	327.8415	0	0	0.000819	0	0	0.051652	0	0	0.017643	0	0	0	0	0	0.020085	0	0	0	0	0	0.0031	0.162792	0	0	0.003106	0	0	0
Sonoma	2023	LDT2	Aggregate	Aggregate	Electricity	217.5584	8209.676	0	8209.676	1114.714	0	0	0	0	0	0	0.002	0.001525	0	0	0	0.008	0.004356	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2023	LDT2	Aggregate	Aggregate	Plug-in Hyb	348.4227	16752.69	8071.665	8681.024	1440.728	0.003333	0	0.117544	0.000531	0	0.001783	0.002	0.001447	0.000577	0	0.001939	0.008	0.004135	137.7195	0	79.13986	0.000452	0	0.043923	0.000603	0	0.021249	0.001433	0	0.178875	0.026108	0.024613	0.312324	0.002091	0	0.195846	0.026108	0.024613	0.312324	0.020177	0.214274	0	1.393223	0.001361	0	0.000782
Sonoma	2023	LHDT1	Aggregate	Aggregate	Gasoline	8377.036	299542.4	299542.4	0	124805.4	0.290217	0.038975	0.680294	0.001966	0	0.000433	0.002	0.0273	0.002138	0	0.000471	0.008	0.078	922.5457	121.7775	25.99916	0.014115	0.118106	0.038158	0.01561	0.003014	0.051683	0.072464	0.44597	0.195168	0.062801	0.35795	3.617907	0.105739	0.650758	0.213684	0.062801	0.35795	3.617907	0.044827	1.65865	3.738799	3.108324	0.00912	0.001204	0.000257
Sonoma	2023	LHDT1	Aggregate	Aggregate	Diesel	8519.397	304773.3	304773.3	0	107163.3	2.646871	2.32973	0	0.052217	0.027122	0	0.003	0.0273	0.054578	0.028349	0	0.012	0.078	643.1304	137.3153	0	0.011147	0.005098	0	0.101325	0.021634	0	0.239984	0.10976	0	0	0	0	0.273206	0.124954	0	0	0	0	0.138237	0.723708	0.909745	0	0.006094	0.001301	0	0
Sonoma	2023	LHDT2	Aggregate	Aggregate	Gasoline	1284.776	48628.54	48628.54	0	19141.24	0.177759	0.037957	0.652357	0.001412	0	0.000254	0.002	0.03185	0.001536	0	0.000276	0.008	0.091	1004.818	139.3689	25.76474	0.007195	0.119472	0.03389	0.010641	0.003132	0.052198	0.034284	0.435228	0.166581	0.04334	0.23012	2.436474	0.050027	0.635084	0.182386	0.04334	0.23012	2.436474	0.044965	0.996769	3.762493	3.095596	0.009934	0.001378	0.000255
Sonoma	2023	LHDT2	Aggregate	Aggregate	Diesel	2964.586	114169.6	114169.6	0	37290.76	1.725429	2.226171	0	0.041495	0.026706	0	0.003	0.03185	0.043371	0.027913	0	0.012	0.091	782.5806	217.0069	0	0.008967	0.005098	0	0.123296	0.03419	0	0.193063	0.10976	0	0	0	0	0.21979	0.124954	0	0	0	0	0.168066	0.530448	0.909745	0	0.007415	0.002056	0	0
Sonoma	2023	MCY	Aggregate	Aggregate	Gasoline	10151.85	54897.63	54897.63	0	20303.69	0.699628	0	0.182585	0.001897	0	0.003789	0.001	0.0042	0.00202	0	0.004011	0.004	0.012	192.7474	0	57.26244	0.206325	0	0.225191	0.045236	0	0.010361	1.43511	0	1.727266	3.55027	3.890255	4.853921	1.68944	0	1.876677	3.55027	3.890255	4.853921	0.008471	16.43081	0	8.789149	0.001906	0	0.000566
Sonoma	2023	MDV	Aggregate	Aggregate	Gasoline	47948.72	1673482	1673482	0	217256.9	0.146165	0	0.569656	0.001421	0	0.002384	0.002	0.003705	0.001545	0	0.002592	0.008	0.010586	432.743	0	114.2267	0.005398	0	0.131552	0.009998	0	0.047794	0.023869	0	0.694406	0.128056	0.374318	2.15406	0.034768	0	0.760277	0.128056	0.374318	2.15406	0.03436	1.266239	0	5.271119	0.004278	0	0.001129
Sonoma	2023	MDV	Aggregate	Aggregate	Diesel	1034.813	39273.07	39273.07	0	4829.975	0.087411	0	0	0.007538	0	0	0.002	0.003676	0.007879	0	0	0.008	0.010502	425.3579	0	0	0.000712	0	0	0.067015	0	0	0.015336	0	0	0	0	0	0.017459	0	0	0	0	0	0.0031	0.244654	0	0	0.00403	0	0	0
Sonoma	2023	MDV	Aggregate	Aggregate	Electricity	227.351	8624.233	0	8624.233	1167.1	0	0	0	0	0	0	0.002	0.001524	0	0	0	0.008	0.004354	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2023	MDV	Aggregate	Aggregate	Plug-in Hyb	240.1999	11159.57	5611.933	5547.638	993.2267	0.003479	0	0.117551	0.000715	0	0.002305	0.002	0.001447	0.000778	0	0.002507	0.008	0.004134	143.7327	0	99.28385	0.000473	0	0.043974	0.000631	0	0.021292	0.001496	0	0.178895	0.030696	0.029376	0.365444	0.002182	0	0.195868	0.030696	0.029376	0.365444	0.021121	0.223594	0	1.393412	0.001421	0	0.000982
Sonoma	2023	MH	Aggregate	Aggregate	Gasoline	1193.561	10262.58	10262.58	0	119.4039	0.562263	0	0.422772	0.001857	0	0.000431	0.003	0.015758	0.002019	0	0.000469	0.012	0.045024	1949.172	0	32.08554	0.020216	0	0.039334	0.031846	0	0.042449	0.091863	0	0.170596	14.20297	0.335756	5.277113	0.134046	0	0.186781	14.20297	0.335756	5.277113	0.04472	2.316872	0	3.747105	0.01927	0	0.000317
Sonoma	2023	MH	Aggregate	Aggregate	Diesel	585.8022	5566.106	5566.106	0	58.58022	4.708088	0	0	0.123218	0	0	0.004	0.01568	0.128789	0	0	0.016	0.044799	1080.322	0	0	0.006393	0	0	0.170205	0	0	0.137635	0	0	0	0	0	0.156688	0	0	0	0	0	0.130942	0.470191	0	0	0.010237	0	0	0
Sonoma	2023	MHDT	Aggregate	Aggregate	Gasoline	672.6531	33092.13	33092.13	0	13458.44	0.647929	0.087754	0.452484	0.001526	0	0.000646	0.003	0.015757	0.00166	0	0.000703	0.012	0.045021	1815.986	538.9668	47.76696	0.021621	0.25248	0.04965	0.02935	0.006946	0.031624	0.111045	1.008612	0.28464	0.04186	0.352633	3.356943	0.162036	1.471764	0.311645	0.04186	0.352633	3.356943	0.044896	2.372906	15.27703	6.335091	0.017953	0.005328	0.000472
Sonoma	2023	MHDT	Aggregate	Aggregate	Diesel	5073.931	223350.4	223350.4	0	59664.4	1.21362	13.05844	1.686033	0.014847	0.036157	0	0.003	0.015841	0.015518	0.037791	0	0.012	0.04526	1140.088	2263.282	0	0.001472	0.012563	0	0.179621	0.356581	0	0.031686	0.270484	0	0	0	0	0.036072	0.307925	0	0	0	0	0.211459	0.119351	7.657894	0	0.010796	0.021432	0	0
Sonoma	2023	MHDT	Aggregate	Aggregate	Electricity	1.942294	44.56289	0	44.56289	23.07529	0	0	0	0	0	0	0.003	0.007924	0	0	0	0.012	0.022639	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2023	MHDT	Aggregate	Aggregate	Natural Ga	30.61999	1584.177	1584.177	0	322.9517	0.142518	6.002312	0	0.001057	0.015993	0	0.003	0.01589	0.00115	0.017394	0	0.012	0.045401	965.0919	4864.204	0	0.688581	16.2618	0	0.19674	0.9916	0	0.009838	0.232349	0	0	0	0	0.702748	16.59636	0	0	0	0	1.06	2.908672	30.41557	0	0	0	0	0
Sonoma	2023	OBUS	Aggregate	Aggregate	Gasoline	175.9246	8189.992	8189.992	0	3519.9	0.671387	0.664853	0.41813	0.001042	0	0.000331	0.003	0.015684	0.001133	0	0.00036	0.012	0.044811	1786.995	381.2393	32.36634	0.017847	0.19334	0.037738	0.029526	0.005207	0.030312	0.088806	0.743141	0.204225	0.035481	0.164054	2.930525	0.129585	1.084389	0.223601	0.035481	0.164054	2.930525	0.044927	1.983247	5.755825	4.368305	0.017666	0.003769	0.00032
Sonoma	2023	OBUS	Aggregate	Aggregate	Diesel	166.0528	12485.04	12485.04	0	1898.862	1.563977	11.45315	1.605992	0.031899	0.015795	0	0.003	0.019487	0.033341	0.016509	0	0.012	0.055678	1380.127	2402.406	0	0.00303	0.036946	0	0.21744	0.3785	0	0.065244	0.795442	0	0	0	0	0.074275	0.90555	0	0	0	0	0.213853	0.208233	12.38702	0	0.013069	0.022749	0	0
Sonoma	2023	OBUS	Aggregate	Aggregate	Natural Ga	1.006981	68.10798	68.10798	0	8.962128	0.212165	1.545028	0	0.000959	0.003718	0	0.003	0.016148	0.001043	0.004043	0	0.012	0.046137	1037.042	1216.052	0	0.77819	4.330901	0	0.211408	0.2479	0	0.011119	0.06188	0	0	0	0	0.7942	4.420002	0	0	0	0	1.06	3.223057	6.943588	0	0	0	0	0
Sonoma	2023	SBUS	Aggregate	Aggregate	Gasoline	58.98136	3054.818	3054.818	0	235.9254	0.213389	0.926353	0.705531	0.000798	0	0.000537	0.002	0.015721	0.000868	0	0.000584	0.008	0.044917	812.6628	2598.494	56.07477	0.004134	2.505189	0.064799	0.016251	0.09044	0.06867	0.019032	10.63893	0.355997	0.090213	0.158514	1.104106	0.027771	15.5243	0.389772	0.090213	0.158514	1.104106	0.045	0.450305	82.22516	9.118099	0.008034	0.025689	0.000554
Sonoma	2023	SBUS	Aggregate	Aggregate	Diesel	392.462	9102.481	9102.481	0	5682.849	3.772994	22.20889	0.448307	0.019663	0.018404	0	0.003	0.015721	0.020552	0.019237	0	0.012	0.044917	1174.814	2276.374	0	0.002898	0.008166	0	0.185092	0.358644	0	0.062389	0.175804	0	0	0	0	0.071025	0.20014	0	0	0	0	0.139921	0.185909	4.491344	0	0.011125	0.021556	0	0
Sonoma	2023	SBUS	Aggregate	Aggregate	Electricity	0.088846	1.032148	0	1.032148	1.286494	0	0	0	0	0	0	0.003	0.00786	0	0	0	0.012	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2023	SBUS	Aggregate	Aggregate	Natural Ga	26.87638	687.8114	687.8114	0	389.17	0.653469	5.324535	0	0.003378	0.010078	0	0.003	0.015721	0.003674	0.010961	0	0.012	0.044917	1276.873	3943.681	0	3.668975	15.91893	0	0.260299	0.803945	0	0.052422	0.22745	0	0	0	0	3.744458	16.24643	0	0	0	0	1.06	12.7422	17.86217	0	0	0	0	0
Sonoma	2023	UBUS	Aggregate	Aggregate	Gasoline	49.01023	3621.417	3621.417	0	196.0409	0.089606	0	0.615787	0.001012	0	0.000315	0.002288	0.033765	0.001101	0	0.000343	0.009152	0.096472	1192.443	0	59.36216	0.00254	0	0.070823	0.009238	0	0.075307	0.00772	0	0.279322	0.04654	0.100799	0.524579	0.011265	0	0.305822	0.04654	0.100799	0.524579	0.045	0.502829	0	7.460654	0.011789	0	0.000587
Sonoma	2023	UBUS	Aggregate	Aggregate	Diesel	43.37245	3876.507	3876.507	0	173.4898	0.352774	0	0	0.006411	0	0	0.003	0.007664	0.0385	0.006701	0	0	0.030656	0.11	1164.167	0	0	0.002998	0	0	0.183415	0	0	0.064545	0	0	0	0	0.07348	0	0	0	0	0	0.22	0.072564	0	0	0.011031	0	0	0
Sonoma	2023	UBUS	Aggregate	Aggregate	Electricity	1.009351	26.88826	0	26.88826	4.037406	0	0	0	0	0	0	0.003	0.01925	0	0	0	0.012	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2023	UBUS	Aggregate	Aggregate	Natural Ga	45.47028	5664.459	5664.459	0	181.8811	0.443098	0	0	0.000154	0	0	0.008125	0.0385	0.000161	0	0	0.0325	0.11	1473.841	0	0	1.366821	0	0	0.300452	0	0	0.019529	0	0	0	0	0	1.394941	0	0	0	0	0	0.97	22.74258	0	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Sonoma
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_PM	PM10_RUI	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLEX	N2O_STRE	ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNL	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNL	TOG_DIUR	NH3_RUNE	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Sonoma	2024	HHDT	Aggregate	Aggregate	Gasoline	1.60E+04	54.77772	54.77772	0	32.17734	17.0318	0	1.710583	0.00528	0	0.002014	0.005	0.037656	0.005742	0	0.00219	0.02	0.107587	2518.174	0	50.60987	0.536698	0	6.64E-05	0.391695	0	0.0312	3.477915	0	0.00036	0.136397	1.24959	9.587823	5.074965	0	0.000395	0.136397	1.24959	9.587823	0.040424	121.4007	0	1.308573	0.024895	0	0.0005
Sonoma	2024	HHDT	Aggregate	Aggregate	Diesel	2371.664	2300548	2300548	0	28188.22	2.242603	48.56909	2.892769	0.02449	0.035161	0	0.008449	0.027536	0.025598	0.03675	0	0.033795	0.078674	1708.226	8911.709	0	0.000977	0.17379	0	0.269132	1.404043	0	0.021032	3.741653	0	0	0	0	0.023943	4.259587	0	0	0	0	0	0.211174	0.102628	53.40066	0	0.016176	0.084389	0
Sonoma	2024	HHDT	Aggregate	Aggregate	Electricity	6.196545	584.9342	0	584.9342	72.70847	0	0	0	0	0	0	0.008418	0.01408	0	0	0	0.033671	0.040229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	HHDT	Aggregate	Aggregate	Natural Ga	171.2577	11229.14	11229.14	0	1352.875	0.825217	10.83035	0	0.002141	0.019848	0	0.009	0.049647	0.002329	0.021587	0	0.036	0.141848	1380.874	9009.978	0	1.351381	28.38005	0	0.2815	1.836743	0	0.042918	0.447167	0	0	0	0	0.1406082	29.0114	0	0	0	0	0	0.831267	9.982727	65.61282	0	0	0	0
Sonoma	2024	LDA	Aggregate	Aggregate	Gasoline	140284	5304989	5304989	0	645118	0.052317	0	0.281941	0.00125	0	0.001998	0.002	0.003109	0.00136	0	0.002173	0.008	0.008882	279.0788	0	71.87062	0.002854	0	0.079694	0.005349	0	0.034745	0.011133	0	0.37321	0.102801	0.275207	1.638256	0.016537	0	0.408618	0.102801	0.275207	1.638256	0.034296	0.839731	0	3.645336	0.002759	0	0.000711
Sonoma	2024	LDA	Aggregate	Aggregate	Diesel	922.4281	27127.11	27127.11	0	3848.774	0.316542	0	0	0.021217	0	0	0.002	0.003175	0.022176	0	0	0.008	0.009071	241.4597	0	0	0.001636	0	0	0.038042	0	0	0.035217	0	0	0	0	0	0.040093	0	0	0	0	0	0	0.0031	0.405291	0	0	0.002288	0	0
Sonoma	2024	LDA	Aggregate	Aggregate	Electricity	8159.075	387247	0	387247	40349.51	0	0	0	0	0	0	0.002	0.001531	0	0	0	0.008	0.004375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	LDA	Aggregate	Aggregate	Plug-in Hyb	3637.796	166766	82861.11	83904.92	1504229	0.003438	0	0.117553	0.000623	0	0.002012	0.002	0.001449	0.000677	0	0.002188	0.008	0.00414	142.0154	0	65.86801	0.000466	0	0.043832	0.00062	0	0.021161	0.001478	0	0.1789	0.041577	0.038208	0.444471	0.002156	0	0.195873	0.041577	0.038208	0.444471	0.019278	0.220923	0	1.393458	0.001404	0	0.000651
Sonoma	2024	LDT1	Aggregate	Aggregate	Gasoline	18023.11	552905.4	552905.4	0	77083.14	0.194865	0	0.505278	0.002188	0	0.003388	0.002	0.003784	0.00238	0	0.003684	0.008	0.010811	336.55	0	93.30549	0.009293	0	0.140804	0.013106	0	0.044334	0.042673	0	0.766864	0.238553	0.71921	3.773489	0.062259	0	0.839618	0.238553	0.71921	3.773489	0.037068	1.981456	0	7.499655	0.003327	0	0.000922
Sonoma	2024	LDT1	Aggregate	Aggregate	Diesel	20.60225	244.6154	244.6154	0	58.14214	1.636843	0	0	0.246171	0	0	0.002	0.004256	0.257302	0	0	0.008	0.012159	422.3585	0	0	0.014377	0	0	0.066543	0	0	0.309523	0	0	0	0	0	0.352372	0	0	0	0	0	0	0.0031	1.627624	0	0	0.004002	0	0
Sonoma	2024	LDT1	Aggregate	Aggregate	Electricity	35.63983	1465.823	0	1465.823	168.144	0	0	0	0	0	0	0.002	0.001538	0	0	0	0.008	0.004393	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	LDT1	Aggregate	Aggregate	Plug-in Hyb	13.64134	678.1406	303.6026	374.538	56.40696	0.003097	0	0.117545	0.000385	0	0.001393	0.002	0.001453	0.000419	0	0.001515	0.008	0.00415	127.9709	0	71.52982	0.000418	0	0.043712	0.000555	0	0.021056	0.001332	0	0.178878	0.023998	0.021067	0.274527	0.001943	0	0.195849	0.023998	0.021067	0.274527	0.018803	0.199115	0	1.393249	0.001265	0	0.000707
Sonoma	2024	LDT2	Aggregate	Aggregate	Gasoline	68818.2	2551279	2551279	0	318009.1	0.086324	0	0.382873	0.001326	0	0.002056	0.002	0.003605	0.001442	0	0.002236	0.008	0.010299	347.9168	0	90.66289	0.00344	0	0.093686	0.006881	0	0.039889	0.014017	0	0.447511	0.097176	0.269155	1.619053	0.020454	0	0.489968	0.097176	0.269155	1.619053	0.035633	0.96156	0	4.255963	0.00344	0	0.000896
Sonoma	2024	LDT2	Aggregate	Aggregate	Diesel	298.8811	11433.07	11433.07	0	1399.326	0.063065	0	0	0.006168	0	0	0.002	0.003617	0.006447	0	0	0.008	0.010335	323.6061	0	0	0.000722	0	0	0.050984	0	0	0.015549	0	0	0	0	0	0.017701	0	0	0	0	0	0	0.0031	0.1571	0	0	0.003066	0	0
Sonoma	2024	LDT2	Aggregate	Aggregate	Electricity	315.211	11817.29	0	11817.29	1608.99	0	0	0	0	0	0	0.002	0.001526	0	0	0	0.008	0.004359	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	LDT2	Aggregate	Aggregate	Plug-in Hyb	431.6497	20544.47	9645.648	10898.83	1784.872	0.003248	0	0.117545	0.000491	0	0.001693	0.002	0.001451	0.000535	0	0.001841	0.008	0.004145	134.2042	0	78.26704	0.000439	0	0.043732	0.000583	0	0.021074	0.001396	0	0.178878	0.025853	0.023854	0.303829	0.002038	0	0.195849	0.025853	0.023854	0.303829	0.019674	0.20882	0	1.393248	0.001327	0	0.000774
Sonoma	2024	LHDT1	Aggregate	Aggregate	Gasoline	8082.811	289644	289644	0	120421.8	0.268988	0.038318	0.670281	0.0019	0	0.000411	0.002	0.0273	0.002066	0	0.000447	0.008	0.078	909.4114	121.0914	26.04851	0.013118	0.116649	0.037152	0.014465	0.002997	0.051346	0.067245	0.438523	0.189505	0.060996	0.351825	3.572821	0.098123	0.639891	0.207484	0.060996	0.351825	3.572821	0.044853	1.587332	3.741131	3.136721	0.00899	0.001197	0.000258
Sonoma	2024	LHDT1	Aggregate	Aggregate	Diesel	8213.836	290995.1	290995.1	0	103319.7	2.513428	2.291347	0	0.050901	0.026946	0	0.003	0.0273	0.053202	0.028165	0	0.012	0.078	642.3917	136.6595	0	0.010859	0.005098	0	0.101209	0.021531	0	0.233791	0.10976	0	0	0	0	0.266156	0.124954	0	0	0	0	0	0.142603	0.702644	0.909745	0	0.006087	0.001295	0
Sonoma	2024	LHDT1	Aggregate	Aggregate	Electricity	14.0715	1093.441	0	1093.441	196.57	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	LHDT2	Aggregate	Aggregate	Gasoline	1245.302	46513.27	46513.27	0	18553.14	0.165586	0.037406	0.644856	0.001371	0	0.000237	0.002	0.03185	0.001491	0	0.000258	0.008	0.091	996.3305	138.8077	25.63666	0.006534	0.117957	0.033234	0.009994	0.0031	0.051677	0.030855	0.428984	0.162329	0.042294	0.226336	2.421357	0.045024	0.625973	0.177729	0.042294	0.226336	2.421357	0.044972	0.944855	3.764715	3.083285	0.00985	0.001372	0.000253
Sonoma	2024	LHDT2	Aggregate	Aggregate	Diesel	2917.809	110729.5	110729.5	0	36702.36	1.647269	2.182286	0	0.040887	0.02672	0	0.003	0.03185	0.042736	0.027928	0	0.012	0.091	779.3962	215.8985	0	0.008786	0.005098	0	0.122794	0.034015	0	0.189148	0.10976	0	0	0	0	0.215332	0.124954	0	0	0	0	0	0.171008	0.52097	0.909745	0	0.007385	0.002046	0
Sonoma	2024	LHDT2	Aggregate	Aggregate	Electricity	3.642145	268.1505	0	268.1505	48.21097	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	MCY	Aggregate	Aggregate	Gasoline	9945.696	53457.73	53457.73	0	19891.39	0.683414	0	0.176824	0.00187	0	0.003524	0.001	0.0042	0.001993	0	0.003735	0.004	0.012	192.1219	0	56.25802	0.200724	0	0.220225	0.044539	0	0.010054	1.386222	0	1.685032	3.55202	3.910604	4.895034	1.636862	0	1.830926	3.55202	3.910604	4.895034	0.008524	15.97023	0	8.756079	0.001899	0	0.000556
Sonoma	2024	MDV	Aggregate	Aggregate	Gasoline	47129.64	1652297	1652297	0	213400.9	0.127353	0	0.526478	0.00135	0	0.002241	0.002	0.003705	0.001468	0	0.002437	0.008	0.010587	425.4376	0	111.8727	0.004758	0	0.122775	0.00905	0	0.045764	0.020663	0	0.639832	0.123934	0.368907	2.13872	0.030136	0	0.700533	0.123934	0.368907	2.13872	0.035029	1.146297	0	4.88379	0.004206	0	0.001106
Sonoma	2024	MDV	Aggregate	Aggregate	Diesel	1017.345	37734.35	37734.35	0	4706.261	0.08223	0	0	0.007415	0	0	0.002	0.003719	0.00775	0	0	0.008	0.010625	422.7238	0	0	0.000703	0	0	0.0666	0	0	0.015129	0	0	0	0	0	0.017223	0	0	0	0	0	0	0.0031	0.246667	0	0	0.004006	0	0
Sonoma	2024	MDV	Aggregate	Aggregate	Electricity	336.2868	12653.18	0	12653.18	1718.806	0	0	0	0	0	0	0.002	0.001525	0	0	0	0.008	0.004358	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	MDV	Aggregate	Aggregate	Plug-in Hyb	291.6522	13545.32	6577.775	6967.549	1205.982	0.00336	0	0.117551	0.000633	0	0.002113	0.002	0.00145	0.000689	0	0.002299	0.008	0.004144	138.8017	0	97.65693	0.000454	0	0.043786	0.000604	0	0.021121	0.001444	0	0.178893	0.031669	0.028155	0.349107	0.002108	0	0.195865	0.031669	0.028155	0.349107	0.020396	0.215941	0	1.393391	0.001372	0	0.000965
Sonoma	2024	MH	Aggregate	Aggregate	Gasoline	1113.896	9613.321	9613.321	0	111.4342	0.520865	0	0.432494	0.001775	0	0.000413	0.003	0.015758	0.00193	0	0.000449	0.012	0.045024	1948.651	0	31.90724	0.018343	0	0.038978	0.030171	0	0.043939	0.082191	0	0.167009	13.74302	0.328438	5.243128	0.119934	0	0.182854	13.74302	0.328438	5.243128	0.044787	2.017338	0	3.642321	0.019264	0	0.000315
Sonoma	2024	MH	Aggregate	Aggregate	Diesel	577.6919	5397.988	5397.988	0	57.76919	4.643384	0	0	0.120736	0	0	0.004	0.01568	0.126195	0	0	0.016	0.044799	1080.422	0	0	0.006366	0	0	0.170221	0	0	0.137067	0	0	0	0	0	0.156041	0	0	0	0	0	0	0.133498	0.467439	0	0	0.010238	0	0
Sonoma	2024	MHDT	Aggregate	Aggregate	Gasoline	646.6174	31951.97	31951.97	0	12937.52	0.5641	0.087987	0.440036	0.00147	0	0.000602	0.003	0.015757	0.001599	0	0.000655	0.012	0.045021	1801.526	535.9975	47.13884	0.018277	0.255712	0.048607	0.026263	0.007123	0.031656	0.092782	1.011968	0.275753	0.038456	0.321996	3.121864	0.135387	1.476662	0.301915	0.038456	0.321996	3.121864	0.044953	1.967229	15.31105	6.098532	0.01781	0.005299	0.000466
Sonoma	2024	MHDT	Aggregate	Aggregate	Diesel	5140.295	224256.9	224256.9	0	60492.94	1.135698	12.70178	1.702469	0.013059	0.030055	0	0.003	0.015841	0.01365	0.031414	0	0.012	0.04526	1136.212	2250.187	0	0.0013	0.011775	0	0.179011	0.354518	0	0.027997	0.253516	0	0	0	0	0.031872	0.288608	0	0	0	0	0	0.212621	0.110056	7.617781	0	0.010759	0.021308	0
Sonoma	2024	MHDT	Aggregate	Aggregate	Electricity	12.12558	648.3102	0	648.3102	149.1578	0	0	0	0	0	0	0.003	0.00792	0	0	0	0.012	0.022628	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	MHDT	Aggregate	Aggregate	Natural Ga	33.03412	1667.859	1667.859	0	347.4564	0.134524	5.994809	0	0.001102	0.016523	0	0.003	0.015896	0.001199	0.01797	0	0.012	0.045419	960.9456	4884.12	0	0.696297	16.04141	0	0.195895	0.99566	0	0.009949	0.2292	0	0	0	0	0.710622	16.37144	0	0	0	0	0	1.06	2.910031	31.59913	0	0	0	0
Sonoma	2024	OBUS	Aggregate	Aggregate	Gasoline	167.1966	7628.652	7628.652	0	3345.27	0.628615	0.064919	0.422292	0.001038	0	0.000317	0.003	0.015684	0.001129	0	0.000345	0.012	0.044811	1775.12	379.8341	32.19998	0.016157	0.193774	0.037707	0.02786	0.005233	0.030598	0.079758	0.744136	0.204104	0.035195	0.166816	3.022436	0.116382	1.085842	0.223469	0.035195	0.166816	3.022436	0.044974	1.772212	5.761782	4.323706	0.017549	0.003755	0.000318
Sonoma	2024	OBUS	Aggregate	Aggregate	Diesel	169.8632	12489.36	12489.36	0	1943.154	1.530294	11.39189	1.611163	0.030802	0.014417	0	0.003	0.019498	0.032195	0.015069	0	0.012	0.055707	1371.362	2385.042	0	0.002915	0.036798	0	0.216059	0.375764	0	0.062758	0.792256	0	0	0	0	0.071445	0.901923	0	0	0	0	0	0.214082	0.2015	12.39254	0	0.012986	0.022585	0
Sonoma	2024	OBUS	Aggregate	Aggregate	Electricity	0.21605	19.19194	0	19.19194	4.322737	0	0	0	0	0	0	0.003	0.007843	0	0	0	0.012	0.022408	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	OBUS	Aggregate	Aggregate	Natural Ga	1.146219	76.54844	76.54844	0	10.20135	0.186674	1.534396	0	0.00108	0.003971	0	0.003	0.016148	0.001175	0.004319	0	0.012	0.046137	1020.927	1214.117	0	0.79212	4.199637	0	0.208123	0.247506	0	0.011318	0.060005	0	0	0	0	0.808416	4.286038	0	0	0	0	0	1.06	3.260585	7.515352	0	0	0	0
Sonoma	2024	SBUS	Aggregate	Aggregate	Gasoline	60.18335	3134.506	3134.506	0	240.7334	0.217513	0.926391	0.727682	0.000805	0	0.000542	0.002	0.015721	0.000875	0	0.00059	0.008	0.044917	810.244	2591.316	55.88573	0.004015	2.507274	0.065376	0.016502	0.089878	0.070254	0.018449	10.63948	0.358983	0.090708	0.160025	1.111555	0.026921	15.5251	0.393041	0.090708	0.160025	1.111555	0.045	0.438725	82.22848	9.068189	0.00801	0.025618	0.000552
Sonoma	2024	SBUS	Aggregate	Aggregate	Diesel	395.7844	9082.046	9082.046	0	5730.958	3.624019	21.80504	0.461047	0.018976	0.017428	0	0.003	0.015721	0.019834	0.018216	0	0.012	0.044917	1170.823	2267.537	0	0.002859	0.008127	0	0.184464	0.357251	0	0.061545	0.174971	0	0	0	0	0.070065	0.199191	0	0	0	0	0	0.143132	0.184331	4.569413	0	0.011087	0.021472	0
Sonoma	2024	SBUS	Aggregate	Aggregate	Electricity	0.874713	25.42456	0	25.42456	11.42416	0	0	0	0	0	0	0.002	0.002758	0.00786	0	0	0	0.011032	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	SBUS	Aggregate	Aggregate	Natural Ga	27.30406	690.0046	690.0046	0	395.3628	0.644021	5.318822	0	0.003378	0.010214	0	0.003	0.015721	0.003674	0.011109	0	0.012	0.044917	1272.607	3948.877	0	3.643017	15.84838	0	0.259429	0.805004	0	0.052052	0.226442	0	0	0	0	3.717966	16.17444	0	0	0	0	0	1.06	12.62004	18.16945	0	0	0	0
Sonoma	2024	UBUS	Aggregate	Aggregate	Gasoline	49.15534	3632.14	3632.14	0	196.6214	0.093381	0	0.588913	0.001111	0	0.000335	0.002288	0.033765	0.001209	0	0.000364	0.009152	0.096472	1168.196	0	58.98479	0.002397	0	0.068502	0.009393	0	0.071842	0.007256	0	0.269888	0.043207	0.102047	0.498698	0.010587	0	0.295493	0.043207	0.102047	0.498698	0.045	0.507024	0	7.501409	0.011549	0	0.000583
Sonoma	2024	UBUS	Aggregate	Aggregate	Diesel	47.15633	4260.635	4260.635	0	188.6253	0.358846	0	0	0.006522	0	0	0.007	0.00779	0.0385	0.006816	0	0	0.031118	0.11	1172.051	0	0	0.003037	0	0	0.184657	0	0	0.065391	0	0	0	0	0.074442	0	0	0	0	0	0	0.22	0.073798	0	0	0.011106	0	0
Sonoma	2024	UBUS	Aggregate	Aggregate	Electricity	1.009351	26.88826	0	26.88826	4.037406	0	0	0	0	0	0	0.003	0.01925	0	0	0	0.012	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2024	UBUS	Aggregate	Aggregate	Natural Ga	41.95244	5308.66	5308.66	0	167.8098	0.424471	0	0	0.000158	0	0	0.008065	0.0385	0.000165	0	0	0.032259	0.11	1460.863	0	0	1.468537	0	0	0.297806	0	0	0.020982	0	0	0	0	0	1.49875	0	0	0	0	0	0	0.97	23.55344	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Sonoma
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_PM	PM10_RUI	PM10_IDLE	PM10_STR	PM10_PM	TOG_RUNEX	TOG_IDLEX	TOG_STREX	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNL	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Sonoma	2025	HHDT	Aggregate	Aggregate	Gasoline	1.21518	48.59365	48.59365	0	24.31331	13.73028	0	1.440054	0.004235	0	0.001807	0.005	0.036447	0.004606	0	0.001965	0.02	0.104133	2397.082	0	50.80033	0.425413	0	8.67E-05	0.331337	0	0.026677	2.694014	0	0.00047	0.127801	1.171774	9.031115	3.931099	0	0.000515	0.127801	1.171774	9.031115	0.041149	92.94988	0	1.652463	0.023698	0	0.000502
Sonoma	2025	HHDT	Aggregate	Aggregate	Diesel	2421.525	231305.3	231305.3	0	28846.83	2.155158	48.1138	2.93078	0.024118	0.032634	0	0.008845	0.027463	0.025208	0.034109	0	0.0338	0.078465	1684.799	8766.192	0	0.000938	0.17352	0	0.265441	1.381117	0	0.020199	3.735832	0	0	0	0	0	0.022995	4.252961	0	0	0	0	0	0.211893	0.097805	53.53372	0	0.015954	0.083011	0
Sonoma	2025	HHDT	Aggregate	Aggregate	Electricity	15.74556	1540.802	0	1540.802	176.6748	0	0	0	0	0	0	0.008288	0.013962	0	0	0	0.033115	0.039893	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	HHDT	Aggregate	Aggregate	Natural Ga	179.8749	11562.85	11562.85	0	1413.563	0.754642	10.53118	0	0.002054	0.020129	0	0.009	0.050376	0.002234	0.021893	0	0.036	0.143932	1370.045	8965.81	0	1.281121	27.51004	0	0.279293	1.827739	0	0.039102	0.429054	0	0	0	0	0	1.331173	28.11701	0	0	0	0	0	0.823694	9.76792	65.68454	0	0	0	0
Sonoma	2025	LDA	Aggregate	Aggregate	Gasoline	140486.4	5323382	5323382	0	646120	0.046823	0	0.267445	0.001211	0	0.001939	0.002	0.003108	0.001317	0	0.002109	0.008	0.00888	274.3141	0	70.37815	0.002564	0	0.074887	0.005004	0	0.033781	0.010003	0	0.34642	0.098815	0.267104	1.595624	0.014597	0	0.379286	0.098815	0.267104	1.595624	0.035182	0.785745	0	3.425075	0.002712	0	0.000696
Sonoma	2025	LDA	Aggregate	Aggregate	Diesel	851.5984	24681.27	24681.27	0	3537.917	0.286196	0	0	0.019618	0	0	0.002	0.003184	0.020506	0	0	0.008	0.009097	239.6326	0	0	0.001534	0	0	0.037754	0	0	0.033023	0	0	0	0	0	0	0.037594	0	0	0	0	0	0.0031	0.393172	0	0	0.002271	0	0
Sonoma	2025	LDA	Aggregate	Aggregate	Electricity	9242.163	448815.3	0	448815.3	45524.87	0	0	0	0	0	0	0.002	0.001532	0	0	0	0.008	0.004377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	LDA	Aggregate	Aggregate	Plug-in Hyb	4032.017	183395.4	89021.7	94373.67	16672.39	0.003358	0	0.117552	0.000584	0	0.001934	0.002	0.001452	0.000635	0	0.002103	0.008	0.004149	138.7438	0	65.13775	0.000453	0	0.043666	0.000601	0	0.021011	0.001444	0	0.178897	0.041472	0.038341	0.438942	0.002107	0	0.195869	0.041472	0.038341	0.438942	0.019063	0.215851	0	1.393428	0.001372	0	0.000644
Sonoma	2025	LDT1	Aggregate	Aggregate	Gasoline	17121.9	524067.4	524067.4	0	7308.55	0.177193	0	0.479994	0.002064	0	0.003206	0.002	0.003786	0.002245	0	0.003487	0.008	0.010818	332.1618	0	91.50685	0.008427	0	0.132839	0.012124	0	0.043144	0.038497	0	0.71763	0.229004	0.680273	3.61012	0.056174	0	0.785715	0.229004	0.680273	3.61012	0.037147	1.834518	0	7.037481	0.003284	0	0.000905
Sonoma	2025	LDT1	Aggregate	Aggregate	Diesel	18.67509	214.0794	214.0794	0	51.64827	1.634428	0	0	0.245796	0	0	0.002	0.004254	0.256909	0	0	0.008	0.012155	422.2783	0	0	0.014358	0	0	0.06653	0	0	0.309114	0	0	0	0	0	0	0.351905	0	0	0	0	0	0.0031	1.624959	0	0	0.004001	0	0
Sonoma	2025	LDT1	Aggregate	Aggregate	Electricity	40.49554	1768.493	0	1768.493	192.3787	0	0	0	0	0	0	0.002	0.001536	0	0	0	0.008	0.004388	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	LDT1	Aggregate	Aggregate	Plug-in Hyb	19.65765	968.3232	420.3054	547.4178	81.28439	0.003007	0	0.117545	0.000368	0	0.001373	0.002	0.001456	0.000401	0	0.001494	0.008	0.00416	124.2516	0	70.50737	0.000404	0	0.043506	0.000534	0	0.020868	0.001293	0	0.178878	0.023737	0.020467	0.271476	0.001887	0	0.195849	0.023737	0.020467	0.271476	0.018256	0.193342	0	1.393252	0.001228	0	0.000697
Sonoma	2025	LDT2	Aggregate	Aggregate	Gasoline	68880.93	2550114	2550114	0	317954.3	0.078036	0	0.360527	0.00129	0	0.002016	0.002	0.003608	0.001403	0	0.002192	0.008	0.010308	341.615	0	88.77211	0.003164	0	0.088846	0.006442	0	0.038631	0.012746	0	0.420523	0.094781	0.265998	1.604185	0.018598	0	0.46042	0.094781	0.265998	1.604185	0.036397	0.905494	0	4.026913	0.003377	0	0.000878
Sonoma	2025	LDT2	Aggregate	Aggregate	Diesel	298.1576	11304.4	11304.4	0	1392.486	0.055268	0	0	0.005556	0	0	0.002	0.003632	0.005808	0	0	0.008	0.010377	319.2147	0	0	0.000685	0	0	0.050292	0	0	0.014753	0	0	0	0	0	0	0.016795	0	0	0	0	0	0.0031	0.153856	0	0	0.003025	0	0
Sonoma	2025	LDT2	Aggregate	Aggregate	Electricity	425.6248	15763.32	0	15763.32	2163.859	0	0	0	0	0	0	0.002	0.001527	0	0	0	0.008	0.004362	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	LDT2	Aggregate	Aggregate	Plug-in Hyb	519.2548	24355.53	11146.44	13209.09	2147.119	0.003166	0	0.117546	0.000461	0	0.001629	0.002	0.001454	0.000501	0	0.001771	0.008	0.004154	130.8218	0	77.38691	0.000426	0	0.043518	0.000563	0	0.020879	0.001361	0	0.17888	0.026005	0.023579	0.300454	0.001986	0	0.195851	0.026005	0.023579	0.300454	0.019187	0.20357	0	1.393267	0.001293	0	0.000765
Sonoma	2025	LHDT1	Aggregate	Aggregate	Gasoline	7783.074	278514.3	278514.3	0	115956.2	0.247208	0.037645	0.659114	0.001829	0	0.000386	0.002	0.0273	0.001989	0	0.00042	0.008	0.078	896.6334	120.384	26.09693	0.011821	0.115132	0.036263	0.013307	0.002977	0.050931	0.060178	0.430901	0.184654	0.058583	0.338837	3.456852	0.087811	0.62877	0.202173	0.058583	0.338837	3.456852	0.044906	1.483903	3.743981	3.170893	0.008864	0.00119	0.000258
Sonoma	2025	LHDT1	Aggregate	Aggregate	Diesel	7905.64	276368.4	276368.4	0	99443	2.380051	2.251722	0	0.049447	0.026806	0	0.003	0.0273	0.051683	0.028019	0	0.012	0.078	641.6904	135.9855	0	0.010539	0.005098	0	0.101099	0.021425	0	0.226895	0.10976	0	0	0	0	0	0.258305	0.124954	0	0	0	0	0	0.147024	0.679739	0.909745	0	0.00608	0.001289	0
Sonoma	2025	LHDT1	Aggregate	Aggregate	Electricity	38.89736	2805.449	0	2805.449	543.9716	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	LHDT2	Aggregate	Aggregate	Gasoline	1205.277	44313.24	44313.24	0	17956.82	0.153874	0.036841	0.637577	0.001337	0	0.000224	0.002	0.03185	0.001454	0	0.000243	0.008	0.091	987.6709	138.2333	25.51978	0.006007	0.116308	0.032496	0.00936	0.003061	0.051171	0.028222	0.422564	0.158257	0.042057	0.226582	2.449546	0.041182	0.616604	0.173271	0.042057	0.226582	2.449546	0.044974	0.905461	3.766599	3.080702	0.009764	0.001367	0.000252
Sonoma	2025	LHDT2	Aggregate	Aggregate	Diesel	2862.923	106708.8	106708.8	0	36011.97	1.571101	2.138683	0	0.040192	0.026755	0	0.003	0.03185	0.04201	0.027965	0	0.012	0.091	776.2399	214.7901	0	0.008586	0.005098	0	0.122297	0.03384	0	0.184852	0.10976	0	0	0	0	0	0.210442	0.124954	0	0	0	0	0	0.173907	0.510461	0.909745	0	0.007355	0.002035	0
Sonoma	2025	LHDT2	Aggregate	Aggregate	Electricity	9.993605	684.9295	0	684.9295	132.5256	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	MCY	Aggregate	Aggregate	Gasoline	9752.792	51929.54	51929.54	0	19505.58	0.667685	0	0.170836	0.001873	0	0.003472	0.001	0.0042	0.001998	0	0.003683	0.004	0.012	191.5324	0	55.30658	0.195372	0	0.215552	0.043862	0	0.009742	1.339882	0	1.645974	3.55364	3.930139	4.933833	1.586926	0	1.788617	3.55364	3.930139	4.933833	0.008575	15.5304	0	8.728359	0.001893	0	0.000547
Sonoma	2025	MDV	Aggregate	Aggregate	Gasoline	46410.79	1625367	1625367	0	209909.6	0.112392	0	0.487202	0.001303	0	0.002162	0.002	0.003705	0.001417	0	0.002351	0.008	0.010587	418.1199	0	109.6989	0.00427	0	0.11476	0.008269	0	0.043847	0.018317	0	0.591641	0.12068	0.363104	2.117546	0.026724	0	0.647772	0.12068	0.363104	2.117546	0.035699	1.062326	0	4.591724	0.004134	0	0.001084
Sonoma	2025	MDV	Aggregate	Aggregate	Diesel	994.2816	35964.14	35964.14	0	4563.948	0.076663	0	0	0.007169	0	0	0.002	0.003756	0.007493	0	0	0.008	0.010731	419.6923	0	0	0.000686	0	0	0.066123	0	0	0.014764	0	0	0	0	0	0	0.016808	0	0	0	0	0	0.0031	0.247417	0	0	0.003977	0	0
Sonoma	2025	MDV	Aggregate	Aggregate	Electricity	453.7925	16839.5	0	16839.5	2308.753	0	0	0	0	0	0	0.002	0.001526	0	0	0	0.008	0.004361	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	MDV	Aggregate	Aggregate	Plug-in Hyb	348.0362	16050.45	7542.262	8508.192	1439.13	0.003251	0	0.11755	0.000571	0	0.00197	0.002	0.001454	0.000621	0	0.002143	0.008	0.004154	134.3175	0	96.13818	0.000438	0	0.043573	0.000579	0	0.020927	0.001398	0	0.178891	0.03095	0.026787	0.335071	0.002039	0	0.195863	0.03095	0.026787	0.335071	0.019736	0.20898	0	1.393375	0.001328	0	0.00095
Sonoma	2025	MH	Aggregate	Aggregate	Gasoline	1039.787	8984.903	8984.903	0	104.0203	0.48055	0	0.442978	0.001699	0	0.000395	0.003	0.015758	0.001847	0	0.00043	0.012	0.045024	1948.189	0	31.73768	0.016611	0	0.038624	0.028518	0	0.045513	0.073355	0	0.163521	13.23757	0.31941	5.168088	0.107039	0	0.179034	13.23757	0.31941	5.168088	0.044839	1.753193	0	3.542845	0.01926	0	0.000314
Sonoma	2025	MH	Aggregate	Aggregate	Diesel	568.7615	5212.417	5212.417	0	56.87615	4.577001	0	0	0.11818	0	0	0.004	0.01568	0.123524	0	0	0.016	0.044799	1080.548	0	0	0.006335	0	0	0.170241	0	0	0.136395	0	0	0	0	0	0	0.155276	0	0	0	0	0	0.136096	4.664276	0	0	0.010239	0	0
Sonoma	2025	MHDT	Aggregate	Aggregate	Gasoline	625.5889	30798.27	30798.27	0	12516.78	0.495206	0.087071	0.430478	0.001435	0	0.000571	0.003	0.015758	0.00156	0	0.000621	0.012	0.045022	1787.22	532.9707	46.53496	0.015753	0.258027	0.04759	0.023669	0.007148	0.031611	0.079253	1.014637	0.267317	0.035882	0.296917	2.923409	0.115645	1.480555	0.292679	0.035882	0.296917	2.923409	0.04498	1.667897	15.33926	5.877323	0.017668	0.005269	0.00046
Sonoma	2025	MHDT	Aggregate	Aggregate	Diesel	5226.13	224489.2	224489.2	0	61547.48	1.053367	12.36555	1.704857	0.011369	0.024561	0	0.003	0.015841	0.011883	0.025672	0	0.012	0.045259	1130.739	2233.331	0	0.001136	0.011066	0	0.178148	0.351862	0	0.024454	0.238254	0	0	0	0	0	0.027839	0.271234	0	0	0	0	0	0.213697	0.100837	7.585003	0	0.010707	0.021148	0
Sonoma	2025	MHDT	Aggregate	Aggregate	Electricity	36.91507	1962.406	0	1962.406	452.8868	0	0	0	0	0	0	0.003	0.007917	0	0	0	0.012	0.02262	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	MHDT	Aggregate	Aggregate	Natural Ga	36.14371	1770.604	1770.604	0	380.4256	0.125652	5.972546	0	0.001151	0.017045	0	0.003	0.015901	0.001251	0.018538	0	0.012	0.045431	955.6612	4891.009	0	0.703883	15.76992	0	0.194818	0.997064	0	0.010057	0.225321	0	0	0	0	0	0.718364	16.09436	0	0	0	0	0	1.06	2.90962	32.77581	0	0	0	0
Sonoma	2025	OBUS	Aggregate	Aggregate	Gasoline	159.5321	7078.737	7078.737	0	3191.919	0.59652	0.064364	0.421822	0.001047	0	0.000313	0.003	0.015684	0.001139	0	0.00034	0.012	0.044811	1762.864	378.4252	32.03848	0.014988	0.193635	0.037563	0.026477	0.005178	0.030583	0.073812	0.744589	0.2037	0.0352	0.168635	3.074271	0.107707	1.086503	0.223026	0.0352	0.168635	3.074271	0.044998	1.624998	5.76449	4.282614	0.017428	0.003741	0.000317
Sonoma	2025	OBUS	Aggregate	Aggregate	Diesel	174.6367	12508.39	12508.39	0	2006.701	1.474796	11.0974	1.604562	0.029757	0.013594	0	0.003	0.019516	0.031103	0.014208	0	0.012	0.055759	1356.907	2385.125	0	0.002817	0.037341	0	0.213781	0.375777	0	0.060641	0.803931	0	0	0	0	0	0.069035	0.915214	0	0	0	0	0	0.214287	0.19475	12.59507	0	0.012849	0.022586	0
Sonoma	2025	OBUS	Aggregate	Aggregate	Electricity	0.529211	46.1494	0	46.1494	10.58846	0	0	0	0	0	0	0.003	0.007843	0	0	0	0.012	0.022408	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	OBUS	Aggregate	Aggregate	Natural Ga	1.288787	85.28426	85.28426	0	11.4702	0.16443	1.525314	0	0.001186	0.004188	0	0.003	0.016148	0.00129	0.004555	0	0.012	0.046137	1003.071	1208.666	0	0.804274	4.087505	0	0.204483	0.246394	0	0.011491	0.058402	0	0	0	0	0	0.820821	4.171599	0	0	0	0	0	1.06	3.293332	8.003782	0	0	0	0
Sonoma	2025	SBUS	Aggregate	Aggregate	Gasoline	61.32417	3195.382	3195.382	0	245.2967	0.217022	0.914613	0.735447	0.000811	0	0.000548	0.002	0.015721	0.000882	0	0.000596	0.008	0.044917	807.8878	2584.346	55.7166	0.003904	2.507831	0.065498	0.016475	0.088576	0.070807	0.017905	10.64006	0.359637	0.106591	0.204906	1.384826	0.026128	15.52595	0.393757	0.106591	0.204906	1.384826	0.045	0.425924	82.23203	9.033585	0.007987	0.025549	0.000551
Sonoma	2025	SBUS	Aggregate	Aggregate	Diesel	398.7543	9054.595	9054.595	0	5773.963	3.466954	21.36663	0.471225	0.01826	0.016452	0	0.003	0.015721	0.019086	0.017195	0	0.012	0.044917	1166.695	2258.115	0	0.002812	0.008097	0	0.183813	0.355767	0	0.06054	0.174317	0	0	0	0	0	0.068921	0.198446	0	0	0	0	0	0.146465	0.182278	4.652341	0	0.011048	0.021383	0
Sonoma	2025	SBUS	Aggregate	Aggregate	Electricity	1.940155	57.89982	0	57.89982	25.39308	0	0	0	0	0	0	0.002	0.002769	0.00786	0	0	0	0.011075	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	SBUS	Aggregate	Aggregate	Natural Ga	27.7498	692.2158	692.2158	0	401.8171	0.634346	5.31306	0	0.003378	0.010352	0	0.003	0.015721	0.003674	0.011258	0	0.012	0.044917	1268.239	3954.118	0	3.616436	15.77724	0	0.258539	0.806073	0	0.051672	0.225426	0	0	0	0	0	3.690838	16.10183	0	0	0	0	0	1.06	12.49495	18.47933	0	0	0	0
Sonoma	2025	UBUS	Aggregate	Aggregate	Gasoline	49.30045	3642.863	3642.863	0	197.2018	0.095362	0	0.556336	0.001166	0	0.000342	0.002	0.002288	0.033765	0.001268	0	0.000372	0.009152	0.096472	1150.719	0	58.47794	0.00227	0	0.066333	0.009464	0	0.06783	0.006844	0	0.261271	0.035114	0.096597	0.425045	0.009986	0	0.286059	0.035114	0.096597	0.425045	0.045	0.508125	0	7.550026	0.011376	0	0.000578
Sonoma	2025	UBUS	Aggregate	Aggregate	Diesel	54.53463	5217.373	5217.373	0	218.1385	0.37041	0	0	0.006733	0	0	0.002	0.007999	0.0385	0.007037	0	0	0.031996	0.11	1187.166	0	0	0.003112	0	0	0.187039	0	0	0.067001	0	0	0	0	0	0.076275	0	0	0	0	0	0.22	0.076148	0	0	0.011249	0	0
Sonoma	2025	UBUS	Aggregate	Aggregate	Electricity	1.009351	26.88826	0	26.88826	4.037406	0	0	0	0	0	0	0.003	0.01925	0	0	0	0.012	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2025	UBUS	Aggregate	Aggregate	Natural Ga	34.84019	4380.252	4380.252	0	139.3608	0.363561	0	0	0.00017	0	0	0.007864	0.0385	0.000178	0	0	0.031458	0.11	1418.21	0	0	1.799141	0	0	0.289111	0	0	0.025706	0	0	0	0	0	0	1.836156	0	0	0	0	0	0.97	26.18148	0	0	0	0	0

CalEEMod EMFAC2021 Emission Factors Input

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004336	0.002868	0.010538	0.176241154	0.008175	0	0	0.092273	0
A	CH4_RUNEX	0.002303	0.008386	0.003109	0.004115	0.011126	0.007794	0.007669	0.061569324	0.010646	0.595837346	0.195372	0.195483	0.012838
A	CH4_STREX	0.068995	0.132298	0.087569	0.110677	0.019472	0.010812	0.007953	6.92229E-08	0.022966	0.023411516	0.215552	0.002492	0.024971
A	CO_IDLEX	0	0	0	0	0.168247	0.132379	0.673198	4.643527769	0.599443	0	0	1.149583	0
A	CO_RUNEX	0.707665	1.825262	0.89017	1.026384	1.077926	0.623534	0.305601	0.573042397	0.721138	8.813333273	15.5304	0.896966	1.279979
A	CO_STREX	3.141427	7.007848	3.965194	4.426019	1.702692	1.02503	0.98221	0.001318944	2.618387	2.66471502	8.728359	0.34374	2.290465
A	CO2_NBIO_IDLEX	0	0	0	0	9.317312	14.48127	162.6472	749.8111198	91.64692	0	0	181.284	0
A	CO2_NBIO_RUNEX	249.4222	330.7017	337.4743	411.3088	765.7831	834.4938	1199.033	1659.433495	1497.935	1251.032329	191.5324	1078.712	1629.642
A	CO2_NBIO_STREX	65.40479	91.17952	87.72116	106.1546	14.01341	8.491098	7.77686	0.040547226	19.5883	20.63927465	55.30658	2.12009	20.51856
A	NOX_IDLEX	0	0	0	0	0.083792	0.114275	0.866441	3.886989817	0.373562	0	0	1.353231	0
A	NOX_RUNEX	0.042963	0.17687	0.076763	0.109482	1.302918	1.150039	0.972678	2.077630497	1.150386	0.291877272	0.667685	2.501862	1.984525
A	NOX_STREX	0.245501	0.477998	0.354953	0.46942	0.353928	0.212139	1.472916	2.77658869	0.874656	0.196353842	0.170836	0.450051	0.286387
A	PM10_IDLEX	0	0	0	0	0.001026	0.001483	0.0018	0.002840805	0.000476	0	0	0.001112	0
A	PM10_PMBW	0.008398	0.010785	0.010215	0.010467	0.077804	0.090795	0.045061	0.081323905	0.051709	0.106400292	0.012	0.044817	0.044941
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009982	0.010814	0.012	0.03389725	0.012	0.025554966	0.004	0.011013	0.013469
A	PM10_RUNEX	0.001277	0.002337	0.001405	0.001524	0.026605	0.029974	0.010493	0.023958744	0.020144	0.003174417	0.001998	0.013706	0.04652
A	PM10_STREX	0.001964	0.003473	0.002165	0.002276	0.000226	8.09E-05	0.000104	1.56829E-06	0.000208	0.000131139	0.003683	2.27E-05	0.000278
A	PM25_IDLEX	0	0	0	0	0.000981	0.001419	0.001722	0.002713094	0.000456	0	0	0.001062	0
A	PM25_PMBW	0.002939	0.003775	0.003575	0.003663	0.027231	0.031778	0.015771	0.028463367	0.018098	0.037240102	0.0042	0.015686	0.015729
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002496	0.002703	0.003	0.008474312	0.003	0.006388742	0.001	0.002753	0.003367
A	PM25_RUNEX	0.001177	0.002153	0.001293	0.001407	0.025417	0.028661	0.010032	0.022918326	0.019257	0.003024111	0.001873	0.013097	0.044464
A	PM25_STREX	0.001806	0.003193	0.001991	0.002092	0.000207	7.44E-05	9.55E-05	1.44199E-06	0.000191	0.000120578	0.003472	2.08E-05	0.000256
A	ROG_DIURN	0.317387	0.841811	0.341885	0.450889	0.124593	0.054705	0.024418	0.000360273	0.093943	0.037503974	4.933833	0.013174	33.39857
A	ROG_HTSK	0.090661	0.228016	0.093283	0.116287	0.031458	0.013994	0.005996	0.000102007	0.021521	0.012393092	3.55364	0.004056	8.558151
A	ROG_IDLEX	0	0	0	0	0.019549	0.01526	0.025208	0.299513318	0.04966	0	0	0.11297	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.009085	0.038409	0.012571	0.017899	0.142494	0.138266	0.030686	0.021497505	0.065015	0.036714064	1.339862	0.049319	0.096499
A	ROG_RUNLS	0.243336	0.677282	0.261467	0.34945	0.181947	0.07539	0.04962	0.000935273	0.103103	0.034092953	3.930139	0.007797	0.2065
A	ROG_STREX	0.31862	0.714649	0.4143	0.570286	0.099155	0.052656	0.044674	3.75532E-07	0.124542	0.092213413	1.645974	0.013685	0.105717
A	SO2_IDLEX	0	0	0	0	9.01E-05	0.000138	0.00152	0.006598922	0.00087	0	0	0.001566	0
A	SO2_RUNEX	0.002465	0.003269	0.003336	0.004063	0.00744	0.008026	0.011381	0.015100394	0.014407	0.0075472	0.001893	0.009658	0.015948
A	SO2_STREX	0.000647	0.000901	0.000867	0.001049	0.000139	8.39E-05	7.69E-05	4.00851E-07	0.000194	0.00020404	0.000547	2.1E-05	0.000203
A	TOG_DIURN	0.317387	0.841811	0.341885	0.450889	0.124593	0.054705	0.024418	0.000360273	0.093943	0.037503974	0.145453	0.013174	33.39857
A	TOG_HTSK	0.090661	0.228016	0.093283	0.116287	0.031458	0.013994	0.005996	0.000102007	0.021521	0.012393092	3.55364	0.004056	8.558151
A	TOG_IDLEX	0	0	0	0	0.027237	0.020399	0.039059	0.504120262	0.064846	0	0	0.229284	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.013213	0.056006	0.018322	0.026014	0.17186	0.160051	0.042789	0.085503999	0.086008	0.638947864	1.586926	0.250951	0.124749
A	TOG_RUNLS	0.243336	0.677282	0.261467	0.34945	0.181947	0.07539	0.04962	0.000935273	0.103103	0.034092953	3.930139	0.007797	0.2065
A	TOG_STREX	0.348849	0.782451	0.453606	0.62439	0.108562	0.057652	0.048912	4.1116E-07	0.136358	0.10096208	1.788617	0.014983	0.115747
A	N2O_IDLEX	0	0	0	0	0.000892	0.001864	0.025093	0.120584645	0.012789	0	0	0.026319	0
A	N2O_RUNEX	0.004629	0.012084	0.006539	0.009342	0.056746	0.088756	0.158545	0.264435998	0.146001	0.171601889	0.043862	0.145842	0.08055
A	N2O_STREX	0.031154	0.042976	0.038089	0.042315	0.027349	0.017026	0.005283	2.12927E-05	0.018698	0.023940172	0.009742	0.002694	0.029424

CalEEMod EMFAC2021 Fleet Mix Input

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.467361	0.051994	0.21197	0.14572	0.047541	0.012328	0.017909	0.007915	0.001016	0.000422	0.029481	0.00148	0.004862

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: Sonoma
Calendar Year: 2030
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_PM	PM10_RUI	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	CO2_RUNE	CO2_IDLEX	CO2_STREX	CH4_RUNE	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNL	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Sonoma	2030	HHDT	Aggregate	Aggregate	Gasoline	0.413995	42.11769	42.11769	0	8.283209	3.894982	0	0.013127	0.001645	0	0.000654	0.005	0.032961	0.00179	0	0.000711	0.02	0.094173	1980.532	0	49.57901	0.12306	0	0.000156	0.144233	0	0.000497	0.625235	0	0.000843	0.059411	0.544129	4.324643	0.912342	0	0.000923	0.059411	0.544129	4.324643	0.045	26.7312	0	4.140578	0.01958	0	0.00049
Sonoma	2030	HHDT	Aggregate	Aggregate	Diesel	2531.088	230058.1	230058.1	0	30502.97	1.797338	46.86979	2.913492	0.023188	0.023038	0	0.008471	0.027953	0.024237	0.02408	0	0.033884	0.078866	1557.17	8168.68	0	0.000778	0.174071	0	0.245333	1.286979	0	0.016748	3.747694	0	0	0	0	0.019067	4.266465	0	0	0	0	0.214858	0.078325	54.54121	0	0.014745	0.077353	0
Sonoma	2030	HHDT	Aggregate	Aggregate	Electricity	150.6212	14705.17	0	14705.17	1610.428	0	0	0	0	0	0	0	0.008174	0.014886	0	0	0	0.032696	0.042533	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	HHDT	Aggregate	Aggregate	Natural Ga	206.7115	12409.7	12409.7	0	1581.181	0.493118	9.197225	0	0.001758	0.021084	0	0.009	0.053724	0.001912	0.022931	0	0.036	0.153496	1323.966	8728.987	0	0.979602	23.63665	0	0.269899	1.779461	0	0.025336	0.356045	0	0	0	0	1.012674	24.14381	0	0	0	0	0.791639	8.864507	65.7216	0	0	0	0
Sonoma	2030	LDA	Aggregate	Aggregate	Gasoline	142725.9	5430197	5430197	0	656692.8	0.031585	0	0.220415	0.000953	0	0.001593	0.002	0.003106	0.001036	0	0.001732	0.008	0.008875	253.5562	0	64.06943	0.001705	0	0.056886	0.004032	0	0.030321	0.006117	0	0.250385	0.07795	0.227958	1.368444	0.088926	0	0.27414	0.07795	0.227958	1.368444	0.038932	0.620367	0	2.644025	0.002507	0	0.000633
Sonoma	2030	LDA	Aggregate	Aggregate	Diesel	473.972	13717.09	13717.09	0	1994.109	0.155082	0	0	0.009189	0	0	0.002	0.003212	0.009605	0	0	0.008	0.009178	227.8699	0	0	0.000883	0	0	0.043901	0	0	0.019	0	0	0	0	0	0.021631	0	0	0	0	0	0.0031	0.311844	0	0	0.002159	0	0
Sonoma	2030	LDA	Aggregate	Aggregate	Electricity	13755.14	624521.5	0	624521.5	66276.01	0	0	0	0	0	0	0.002	0.001535	0	0	0	0.008	0.004387	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	LDA	Aggregate	Aggregate	Plug-in Hyb	5522.463	234980	105414.8	129565.2	22835.38	0.003104	0	0.117546	0.000416	0	0.001528	0.002	0.001463	0.000452	0	0.001662	0.008	0.00418	128.2417	0	62.28463	0.000411	0	0.042883	0.000537	0	0.0203	0.001334	0	0.178881	0.041226	0.051809	0.522406	0.001947	0	0.195852	0.041226	0.051809	0.522406	0.018297	0.199572	0	1.393277	0.001268	0	0.000616
Sonoma	2030	LDT1	Aggregate	Aggregate	Gasoline	13477.03	412493.8	412493.8	0	57417.71	0.105603	0	0.36813	0.001502	0	0.002447	0.002	0.003777	0.001633	0	0.002662	0.008	0.010792	309.7482	0	82.88501	0.00512	0	0.098471	0.008194	0	0.037704	0.022639	0	0.508741	0.183951	0.550875	3.055465	0.033034	0	0.557008	0.183951	0.550875	3.055465	0.038255	1.250944	0	5.034164	0.003062	0	0.000819
Sonoma	2030	LDT1	Aggregate	Aggregate	Diesel	0.058128	2.32042	2.32042	0	0.26867	0.092126	0	0	0.01286	0	0	0.002	0.003452	0.013442	0	0	0.008	0.009862	365.2716	0	0	0.001244	0	0	0.057549	0	0	0.026778	0	0	0	0	0	0.030485	0	0	0	0	0	0.0031	0.213074	0	0	0.003461	0	0
Sonoma	2030	LDT1	Aggregate	Aggregate	Electricity	85.45005	4055.881	0	4055.881	416.4733	0	0	0	0	0	0	0.002	0.001532	0	0	0	0.008	0.004377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	LDT1	Aggregate	Aggregate	Plug-in Hyb	60.94763	2831.598	1171.787	1659.811	252.0184	0.002863	0	0.117545	0.000247	0	0.000989	0.002	0.001464	0.000269	0	0.001075	0.008	0.004182	118.3043	0	67.8439	0.00038	0	0.04292	0.000496	0	0.020334	0.001231	0	0.178878	0.022869	0.020158	0.272167	0.001796	0	0.195849	0.022869	0.020158	0.272167	0.017381	0.184134	0	1.393247	0.00117	0	0.000671
Sonoma	2030	LDT2	Aggregate	Aggregate	Gasoline	69031.68	2525220	2525220	0	316825.8	0.051531	0	0.288183	0.001013	0	0.001668	0.002	0.00362	0.001102	0	0.001814	0.008	0.010344	315.5053	0	81.01569	0.00226	0	0.070142	0.005034	0	0.034674	0.008546	0	0.318482	0.079266	0.238575	1.444228	0.01247	0	0.348698	0.079266	0.238575	1.444228	0.039358	0.730668	0	3.22032	0.003119	0	0.000801
Sonoma	2030	LDT2	Aggregate	Aggregate	Diesel	284.4128	10395.67	10395.67	0	1310.497	0.038468	0	0	0.004576	0	0	0.002	0.003656	0.004783	0	0	0.008	0.010446	297.9877	0	0	0.000623	0	0	0.046948	0	0	0.013408	0	0	0	0	0	0.015264	0	0	0	0	0	0.0031	0.145602	0	0	0.002824	0	0
Sonoma	2030	LDT2	Aggregate	Aggregate	Electricity	1062.635	36824.85	0	36824.85	5285.132	0	0	0	0	0	0	0.002	0.001531	0	0	0	0.008	0.004374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	LDT2	Aggregate	Aggregate	Plug-in Hyb	958.0116	41659.09	17857.07	23802.02	3961.378	0.002965	0	0.117547	0.000317	0	0.001221	0.002	0.001464	0.000345	0	0.001328	0.008	0.004183	122.5422	0	74.46949	0.000392	0	0.042758	0.00051	0	0.020185	0.001275	0	0.178884	0.02676	0.026574	0.321313	0.00186	0	0.195855	0.02676	0.026574	0.321313	0.017992	0.190733	0	1.393304	0.001211	0	0.000736
Sonoma	2030	LHDT1	Aggregate	Aggregate	Gasoline	6521.007	229482.1	229482.1	0	9715.329	0.162587	0.034303	0.594743	0.001613	0	0.000302	0.002	0.0273	0.001754	0	0.000328	0.008	0.078	844.3063	116.9743	25.90841	0.00717	0.106961	0.031384	0.008862	0.002853	0.047908	0.034655	0.392875	0.156237	0.049559	0.298022	3.043991	0.050568	0.573282	0.17106	0.049559	0.298022	3.043991	0.045	1.077512	3.753036	3.235482	0.008347	0.001156	0.000256
Sonoma	2030	LHDT1	Aggregate	Aggregate	Diesel	6325.365	209752.3	209752.3	0	79565.13	1.756527	2.039396	0	0.041204	0.026148	0	0.003	0.0273	0.043067	0.02733	0	0.012	0.078	637.9858	132.4149	0	0.00876	0.005098	0	0.100515	0.020862	0	0.188607	0.10976	0	0	0	0	0.214716	0.124954	0	0	0	0	0.168471	0.556904	0.909745	0	0.006045	0.001255	0
Sonoma	2030	LHDT1	Aggregate	Aggregate	Electricity	401.741	25016.01	0	25016.01	5627.769	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	LHDT2	Aggregate	Aggregate	Gasoline	1003.491	34713.27	34713.27	0	1495O.52	0.096868	0.034003	0.596175	0.001188	0	0.000159	0.002	0.03185	0.001292	0	0.000173	0.008	0.091	947.5211	135.3721	24.97448	0.003263	0.10822	0.028959	0.006348	0.002878	0.048574	0.013858	0.390299	0.138274	0.038137	0.220269	2.47219	0.020222	0.569523	0.151393	0.038137	0.220269	2.47219	0.045	0.689947	3.775156	3.087357	0.009367	0.001338	0.000247
Sonoma	2030	LHDT2	Aggregate	Aggregate	Diesel	2527.749	87158.93	87158.93	0	31795.9	1.262464	1.932125	0	0.035954	0.026901	0	0.003	0.03185	0.03758	0.028118	0	0.012	0.091	760.7058	209.4344	0	0.007537	0.005098	0	0.11985	0.032996	0	0.162272	0.10976	0	0	0	0	0.184736	0.124954	0	0	0	0	0.188844	0.45676	0.909745	0	0.007208	0.001984	0
Sonoma	2030	LHDT2	Aggregate	Aggregate	Electricity	101.4218	6044.223	0	6044.223	1344.994	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	MCY	Aggregate	Aggregate	Gasoline	8919.366	46274.62	46274.62	0	17838.73	0.599049	0	0.143541	0.001878	0	0.00315	0.001	0.0042	0.002009	0	0.003355	0.004	0.012	188.9008	0	50.69062	0.17227	0	0.192786	0.040918	0	0.00832	1.138941	0	1.452324	3.556898	3.992608	4.994778	1.369677	0	1.57884	3.556898	3.992608	4.994778	0.008794	13.62555	0	8.599194	0.001867	0	0.000501
Sonoma	2030	MDV	Aggregate	Aggregate	Gasoline	43637.17	1521765	1521765	0	196576.2	0.066456	0	0.358384	0.001026	0	0.001777	0.002	0.003699	0.001116	0	0.001933	0.008	0.010568	385.5154	0	100.2176	0.002763	0	0.085246	0.00583	0	0.037738	0.011132	0	0.418084	0.101245	0.318422	1.887922	0.016244	0	0.457749	0.101245	0.318422	1.887922	0.038657	0.807704	0	3.606472	0.003811	0	0.000991
Sonoma	2030	MDV	Aggregate	Aggregate	Diesel	825.7898	27286.55	27286.55	0	3695.515	0.045341	0	0	0.004648	0	0	0.002	0.003854	0.004859	0	0	0.008	0.011011	400.4868	0	0	0.000525	0	0	0.063097	0	0	0.011311	0	0	0	0	0	0.012877	0	0	0	0	0	0.0031	0.230823	0	0	0.003795	0	0
Sonoma	2030	MDV	Aggregate	Aggregate	Electricity	1060.895	36570.42	0	36570.42	5268.017	0	0	0	0	0	0	0.002	0.001532	0	0	0	0.008	0.004377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	MDV	Aggregate	Aggregate	Plug-in Hyb	612.9674	26649.6	11517.12	15132.48	2534.62	0.00299	0	0.117549	0.000356	0	0.001375	0.002	0.001465	0.000388	0	0.001495	0.008	0.004185	123.5422	0	91.41604	0.000396	0	0.042802	0.000515	0	0.020224	0.001285	0	0.178888	0.030271	0.032013	0.365898	0.001876	0	0.19586	0.030271	0.032013	0.365898	0.018151	0.192262	0	1.393342	0.001221	0	0.000904
Sonoma	2030	MH	Aggregate	Aggregate	Gasoline	749.2935	6715.176	6715.176	0	74.95932	0.294672	0	0.50334	0.00138	0	0.000323	0.003	0.015758	0.001501	0	0.000351	0.012	0.045023	1946.106	0	31.00569	0.0087	0	0.037225	0.020914	0	0.053775	0.032663	0	0.148981	10.10927	0.250437	4.261365	0.047662	0	0.163115	10.10927	0.250437	4.261365	0.045	0.569221	0	3.112292	0.019239	0	0.000307
Sonoma	2030	MH	Aggregate	Aggregate	Diesel	514.3636	4402.26	4402.26	0	514.3636	4.183013	0	0	0.010843	0	0	0.004	0.015679	0.106448	0	0	0.016	0.044799	1081.424	0	0	0.006018	0	0	0.170379	0	0	0.129568	0	0	0	0	0	0.147504	0	0	0	0	0	0.150223	0.435354	0	0	0.010247	0	0
Sonoma	2030	MHDT	Aggregate	Aggregate	Gasoline	521.4089	24569.24	24569.24	0	10432.35	0.268753	0.08113	0.37749	0.001358	0	0.000486	0.003	0.015758	0.001477	0	0.000528	0.012	0.045022	1720.172	517.8608	43.71408	0.008328	0.264577	0.043078	0.015078	0.006967	0.029787	0.039704	1.023973	0.230633	0.027057	0.228213	2.361834	0.057397	1.494179	0.252515	0.027057	0.228213	2.361834	0.045	0.771807	15.44658	4.875127	0.017006	0.00512	0.000432
Sonoma	2030	MHDT	Aggregate	Aggregate	Diesel	5349.171	21334l.1	213341.1	0	63105.51	0.726654	11.28423	1.598915	0.006302	0.009065	0	0.003	0.015841	0.006587	0.009474	0	0.012	0.045259	1101.012	2150.762	0	0.000624	0.009093	0	0.173465	0.338853	0	0.013437	0.195778	0	0	0	0	0.015297	0.222878	0	0	0	0	0.217136	0.070484	7.517934	0	0.010426	0.020366	0
Sonoma	2030	MHDT	Aggregate	Aggregate	Electricity	425.7384	22068.39	0	22068.39	5208.828	0	0	0	0	0	0	0.003	0.007914	0	0	0	0.012	0.022611	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	MHDT	Aggregate	Aggregate	Natural Ga	51.88113	2273.593	2273.593	0	554.0146	0.097949	5.858532	0	0.001295	0.01839	0	0.003	0.015901	0.001408	0.020001	0	0.012	0.045432	937.1382	4870.323	0	0.72208	14.86182	0	0.191042	0.992847	0	0.010317	0.212346	0	0	0	0	0.736935	15.16758	0	0	0	0	1.06	2.898573	35.85688	0	0	0	0
Sonoma	2030	OBUS	Aggregate	Aggregate	Gasoline	128.416	4852.623	4852.623	0	2569.347	0.492217	0.060669	0.417217	0.001145	0	0.00033	0.003	0.015684	0.001245	0	0.000359	0.012	0.044812	1702.792	372.1376	31.35564	0.01176	0.189929	0.03656	0.021353	0.004705	0.029285	0.058564	0.744307	0.201266	0.038761	0.208544	3.745891	0.085457	1.086091	0.220361	0.038761	0.208544	3.745891	0.045	1.299439	5.762787	4.123097	0.016834	0.003679	0.00031
Sonoma	2030	OBUS	Aggregate	Aggregate	Diesel	191.8074	12613.93	12613.93	0	2232.53	1.278636	9.514459	1.453788	0.024297	0.00955	0	0.003	0.01994	0.025396	0.009982	0	0.012	0.056972	1285.671	2352.495	0	0.002243	0.038678	0	0.202558	0.370636	0	0.048287	0.832736	0	0	0	0	0.054971	0.948007	0	0	0	0	0.215498	0.161462	13.17564	0	0.012175	0.022277	0
Sonoma	2030	OBUS	Aggregate	Aggregate	Electricity	4.541431	376.7337	0	376.7337	90.86496	0	0	0	0	0	0	0.003	0.007843	0	0	0	0.012	0.022408	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	OBUS	Aggregate	Aggregate	Natural Ga	1.836737	114.2093	114.2093	0	16.34696	0.105774	1.500808	0	0.001465	0.004772	0	0.003	0.016148	0.001594	0.00519	0	0.012	0.046137	942.9386	1181.93	0	0.836326	3.784927	0	0.192224	0.240944	0	0.011949	0.054079	0	0	0	0	0.853532	3.862796	0	0	0	0	1.06	3.379684	9.321763	0	0	0	0
Sonoma	2030	SBUS	Aggregate	Aggregate	Gasoline	65.12182	3395.691	3395.691	0	260.4873	0.219977	0.868542	0.852507	0.000838	0	0.00057	0.002	0.015721	0.000911	0	0.00062	0.008	0.044917	798.4079	2556.383	55.17101	0.003431	2.508051	0.069078	0.017082	0.081249	0.078222	0.015579	10.64152	0.378577	0.14454	0.404854	2.517257	0.022732	15.52808	0.414494	0.14454	0.404854	2.517257	0.045	0.379965	82.24088	8.943879	0.007893	0.025272	0.000545
Sonoma	2030	SBUS	Aggregate	Aggregate	Diesel	396.9095	8624.815	8624.815	0	5747.25	2.567954	18.52061	0.514688	0.014637	0.011241	0	0.003	0.015721	0.015299	0.01175	0	0.012	0.044917	1145.501	2202.648	0	0.002428	0.008039	0	0.180474	0.347028	0	0.052268	0.173088	0	0	0	0	0.055504	0.197047	0	0	0	0	0.164826	0.16313	5.167433	0	0.010847	0.020858	0
Sonoma	2030	SBUS	Aggregate	Aggregate	Electricity	19.89124	588.3571	0	588.3571	264.8425	0	0	0	0	0	0	0.002804	0.00786	0	0	0	0.012	0.012217	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	SBUS	Aggregate	Aggregate	Natural Ga	29.87439	693.279	693.279	0	432.5812	0.589197	5.287795	0	0.003378	0.010954	0	0.003	0.015721	0.003674	0.011914	0	0.012	0.044917	1247.825	3977.009	0	3.492392	15.4653	0	0.254377	0.810739	0	0.049899	0.220969	0	0	0	0	3.564242	15.78348	0	0	0	0	1.06	11.91122	19.83808	0	0	0	0
Sonoma	2030	UBUS	Aggregate	Aggregate	Gasoline	48.69525	3527.976	3527.976	0	194.781	0.072783	0	0.480798	0.001212	0	0.000345	0.002	0.002254	0.033539	0.001318	0	0.000375	0.009016	0.095826	1105.925	0	55.60481	0.00194	0	0.059744	0.007788	0	0.061083	0.005777	0	0.232539	0.027469	0.099548	0.385851	0.00843	0	0.254601	0.027469	0.099548	0.385851	0.045	0.50214	0	7.124608	0.010933	0	0.00055
Sonoma	2030	UBUS	Aggregate	Aggregate	Diesel	56.14719	5633.031	5633.031	0	224.5888	0.377226	0	0	0.006857	0	0	0.008129	0.0385	0.007168	0	0	0.032514	0.11	1195.998	0	0	0.003156	0	0	0.18843	0	0	0.06795	0	0	0	0	0	0.077356	0	0	0	0	0	0.22	0.077533	0	0	0.011333	0	0
Sonoma	2030	UBUS	Aggregate	Aggregate	Electricity	14.65998	1857.657	0	1857.657	58.63992	0	0	0	0	0	0	0.006942	0.01925	0	0	0	0.027769	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma	2030	UBUS	Aggregate	Aggregate	Natural Ga	22.23797	2443.971	2443.971	0	88.9519	0.13016	0	0	0.000246	0	0	0.007859	0.0385	0.000257	0	0	0.031435	0.11	1309.397	0	0	3.516398	0	0	0.266929	0	0	0.050242	0	0	0	0	0	3.588742	0	0	0	0	0	0.97	41.82134	0	0	0	0	0

CalEEMod EMFAC2021 Emission Factors Input

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004002	0.002599	0.012076	0.158044621	0.007896	0	0	0.093739	0
A	CH4_RUNEX	0.001486	0.005038	0.002191	0.002623	0.007502	0.006021	0.007548	0.04797817	0.010072	0.640186559	0.17227	0.184466	0.007638
A	CH4_STREX	0.051242	0.097523	0.068398	0.081057	0.016721	0.009262	0.005667	3.82537E-08	0.019135	0.020525139	0.192786	0.002684	0.022077
A	CO_IDLEX	0	0	0	0	0.165773	0.130233	0.632138	4.499144361	0.669033	0	0	1.193011	0
A	CO_RUNEX	0.542545	1.231638	0.709444	0.769447	0.784235	0.498458	0.154774	0.502112997	0.486056	7.756167471	13.62555	0.823552	0.516213
A	CO_STREX	2.364446	4.982249	3.133335	3.424152	1.723851	0.987404	0.641344	0.001017637	2.15797	2.447675863	8.599194	0.347459	1.845754
A	CO2_NBIO_IDLEX	0	0	0	0	8.776507	14.23087	151.6694	667.0067336	102.0933	0	0	172.9323	0
A	CO2_NBIO_RUNEX	223.7073	305.4603	307.916	372.6941	705.5937	775.4584	1064.948	1456.963698	1369.237	1027.94879	188.9008	1011.564	1603.711
A	CO2_NBIO_STREX	58.16572	82.22509	79.3043	95.79318	13.80389	7.987382	5.750776	0.012185117	16.41109	19.10316457	50.69062	2.143326	18.38802
A	NOX_IDLEX	0	0	0	0	0.071971	0.105207	0.765536	3.576336104	0.373896	0	0	1.128316	0
A	NOX_RUNEX	0.027662	0.103888	0.049979	0.063542	0.873981	0.886498	0.617157	1.632002112	1.031839	0.200540925	0.599049	1.751867	1.834369
A	NOX_STREX	0.197151	0.364401	0.280313	0.340012	0.316877	0.19067	1.322037	2.636875785	0.879512	0.165179429	0.143541	0.474278	0.298507
A	PM10_IDLEX	0	0	0	0	0.000948	0.00152	0.000652	0.001949054	0.000392	0	0	0.000749	0
A	PM10_PMBW	0.008256	0.010685	0.010162	0.010329	0.075899	0.08885	0.043332	0.081286554	0.052892	0.132912514	0.012	0.043924	0.044934
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009807	0.010725	0.012	0.033915468	0.012	0.042780998	0.004	0.010944	0.013584
A	PM10_RUNEX	0.00093	0.001608	0.001089	0.001142	0.020325	0.025956	0.005509	0.021770224	0.018185	0.003391016	0.002009	0.010343	0.043058
A	PM10_STREX	0.001572	0.002636	0.001772	0.001844	0.000175	5.53E-05	6.95E-05	1.74831E-07	0.000188	0.000128921	0.003355	2.41E-05	0.000208
A	PM25_IDLEX	0	0	0	0	0.000907	0.001455	0.000623	0.001859496	0.000375	0	0	0.000714	0
A	PM25_PMBW	0.00289	0.00374	0.003557	0.003615	0.026564	0.031098	0.015166	0.028450294	0.018512	0.04651938	0.0042	0.015373	0.015727
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002452	0.002681	0.003	0.008478867	0.003	0.01069525	0.001	0.002736	0.003396
A	PM25_RUNEX	0.000856	0.001479	0.001002	0.001053	0.019413	0.02482	0.005265	0.020825004	0.017386	0.003231449	0.001878	0.00988	0.041161
A	PM25_STREX	0.001445	0.002424	0.001629	0.001696	0.000161	5.08E-05	6.39E-05	1.60751E-07	0.000173	0.000118538	0.00315	2.21E-05	0.000191
A	ROG_DIURN	0.265041	0.709205	0.305469	0.397011	0.108858	0.05307	0.015529	5.31225E-05	0.097988	0.033140013	4.994778	0.024448	25.26204
A	ROG_HTSK	0.069712	0.181933	0.077033	0.096019	0.026405	0.012197	0.003559	1.46014E-05	0.020287	0.00943693	3.556898	0.005615	5.995331
A	ROG_IDLEX	0	0	0	0	0.017857	0.014314	0.020078	0.283636011	0.052027	0	0	0.114583	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.005361	0.022275	0.008329	0.01072	0.102344	0.114329	0.01474	0.016304923	0.04982	0.039066427	1.138941	0.040467	0.071035
A	ROG_RUNLS	0.201767	0.544621	0.231203	0.301216	0.158785	0.070447	0.030022	0.000133731	0.109149	0.034199975	3.992608	0.015728	0.148522
A	ROG_STREX	0.225343	0.50366	0.310376	0.39716	0.083243	0.044223	0.030341	2.07187E-07	0.10534	0.07988923	1.452324	0.014707	0.088353
A	SO2_IDLEX	0	0	0	0	8.49E-05	0.000136	0.001407	0.005809182	0.000967	0	0	0.00148	0
A	SO2_RUNEX	0.002211	0.00302	0.003044	0.003682	0.006857	0.007453	0.010075	0.013191837	0.013101	0.007606938	0.001867	0.009048	0.015679
A	SO2_STREX	0.000575	0.000813	0.000784	0.000947	0.000136	7.9E-05	5.69E-05	1.20462E-07	0.000162	0.000188854	0.000501	2.12E-05	0.000182
A	TOG_DIURN	0.265041	0.709205	0.305469	0.397011	0.108858	0.05307	0.015529	5.31225E-05	0.097988	0.033140013	0.134652	0.024448	25.26204
A	TOG_HTSK	0.069712	0.181933	0.077033	0.096019	0.026405	0.012197	0.003559	1.46014E-05	0.020287	0.00943693	3.556898	0.005615	5.995331
A	TOG_IDLEX	0	0	0	0	0.024836	0.018982	0.034782	0.468494471	0.066897	0	0	0.232798	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.007809	0.032504	0.012137	0.015581	0.122007	0.131362	0.024261	0.066061059	0.067134	0.686067104	1.369677	0.230144	0.087197
A	TOG_RUNLS	0.201767	0.544621	0.231203	0.301216	0.158785	0.070447	0.030022	0.000133731	0.109149	0.034199975	3.992608	0.015728	0.148522
A	TOG_STREX	0.246722	0.551445	0.339823	0.43484	0.09114	0.048419	0.033219	2.26844E-07	0.115334	0.087468651	1.57884	0.016103	0.096736
A	N2O_IDLEX	0	0	0	0	0.000826	0.001846	0.023552	0.107566318	0.014695	0	0	0.024943	0
A	N2O_RUNEX	0.003572	0.008063	0.005058	0.006579	0.049794	0.083385	0.144182	0.232475625	0.149276	0.129341237	0.040918	0.134634	0.080099
A	N2O_STREX	0.027247	0.037359	0.0338	0.035899	0.025525	0.015535	0.003919	1.22219E-07	0.015327	0.020985331	0.00832	0.003039	0.031891

CalEEMod EMFAC2021 Fleet Mix Input

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.491083	0.041177	0.215613	0.139447	0.040042	0.01098	0.019187	0.008731	0.000987	0.000428	0.026958	0.001547	0.003819

Attachment 4: Project Construction Emissions and Health Risk Calculations

270 & 280 Casa Grande Road, Petaluma, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2023	Construction	0.0511	Point	373	102.2	0.03111	3.92E-03	1.05E-05
2024	Construction	0.0149	Point	373	29.8	0.00908	1.14E-03	3.07E-06
Total		***0.0660***			***132.0***	***0.0402***	***0.0051***	

Emissions assumed to be evenly distributed over each construction areas

hr/day = 9 (8am -5pm)
days/yr = 365
hours/year = 3285

270 & 280 Casa Grande Road, Petaluma, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2023	Construction	CON_FUG	0.1054	210.8	0.06418	8.09E-03	18204.2	4.44E-07
2024	Construction	CON_FUG	0.0003	0.7	0.00020	2.53E-05	18204.2	1.39E-09
Total			***0.1058***	***211.5***	***0.0644***	***0.0081***		

Emissions assumed to be evenly distributed over each construction areas

hr/day = 9 (8am -5pm)
days/yr = 365
hours/year = 3285

270 & 280 Casa Grande Road, Petaluma, CA
Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2023	0.0264	0.1622	4.70	0.08	0.01	0.19
2024	0.0077	0.001	1.27	0.02	0.002	0.01
Total	-	-	**5.97**	**0.10**		-
Maximum	0.0264	0.1622	**-**	**-**	**0.01**	**0.19**

Maximum Impacts at Casa Grande High School

Construction Year	Unmitigated Emissions: Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Unmitigated Emissions: Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Child Cancer Risk (per million)	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2023	0.0071	0.0202	0.45	0.0014	0.027
2024	0.0021	0.0001	0.13	0.0004	0.002
Total	-	-	**0.58**	-	-
Maximum	0.0071	0.0202	**-**	**0.0014**	**0.027**

270 & 280 Casa Grande Road, Petaluma, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information						
						Infant/Child		Modeled		Adult	Adult	Maximum		
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	Hazard	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2023	0.0243	10	0.33	2023	0.0243	-	-			
1	1	0 - 1	2023	0.0243	10	3.99	2023	0.0243	1	0.07	0.005	0.159	0.18
2	1	1 - 2	2024	0.0071	10	1.17	2024	0.0071	1	0.02	0.001	0.000	0.01
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**5.49**				**0.09**			

* Third trimester of pregnancy

270 & 280 Casa Grande Road, Petaluma, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information						
						Infant/Child		Modeled		Adult	Adult	Maximum		
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	Hazard	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2023	0.0264	10	0.36	2023	0.0264	-	-			
1	1	0 - 1	2023	0.0264	10	4.34	2023	0.0264	1	0.08	0.01	0.162	0.19
2	1	1 - 2	2024	0.0077	10	1.27	2024	0.0077	1	0.02	0.00	0.001	0.01
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**5.97**				**0.10**			

* Third trimester of pregnancy

270 & 280 Casa Grande Road, Petaluma, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Casa Grande High School - 1.5 meter - Child Exposure

Student Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x SAF x 8-Hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
SAF = Student Adjustment Factor (unitless)
= (24 hrs/9 hrs) x (7 days/5 days) = 3.73
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	School Infant	School Child	Adult
Age -->	**0 - <2**	**2 - <16**	**16 - 30**
Parameter			
ASF =	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00
8-Hr BR* =	1200	520	240
A =	1	1	1
EF =	250	250	250
AT =	70	70	70
SAF =	3.73	3.73	1.00

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Child - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Child Cancer Risk (per million)
1	1	13 - 14	2023	0.0071	3	0.4
2	1	14 - 15	2024	0.0021	3	0.1
3	1			0.0000	3	0.0
4	1			0.0000	3	0.0
5	1			0.0000	3	0.0
6	1			0.0000	3	0.0
7	1			0.0000	3	0.0
8	1			0.0000	3	0.0
9	1			0.0000	3	0.0
Total Increased Cancer Risk						**0.58**

* Children assumed to be 13 years of age or older with 3 years of Construction Exposure

Maximum		
Hazard Index	**Fugitive PM2.5**	**Total PM2.5**
0.0014	0.0202	0.027
0.0004	0.0001	0.002

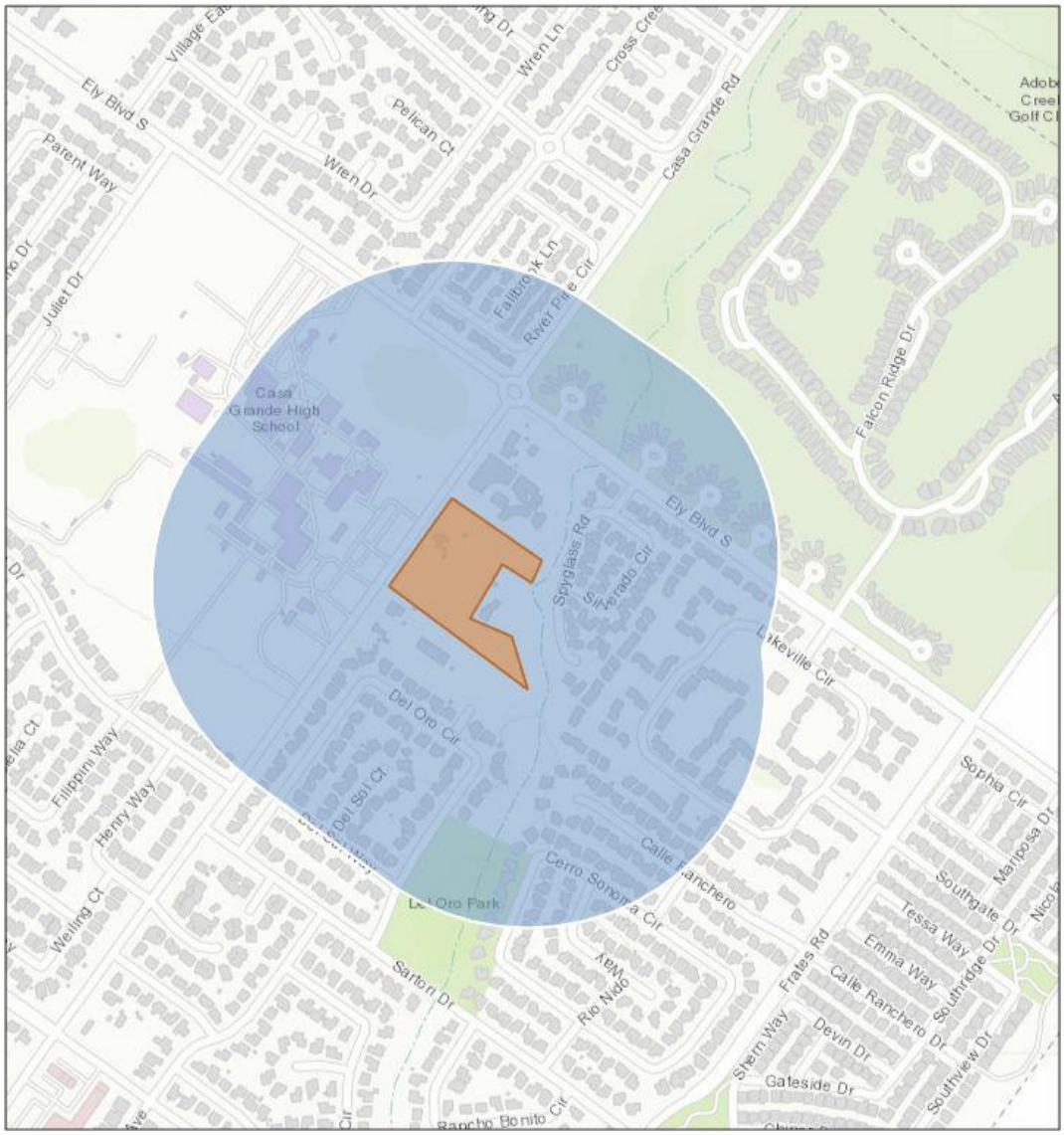
Attachment 5: Community Risk Modeling Information and Calculations

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 5,591,561.68 ft²

Dec 16 2021 11:23:02 Pacific Standard Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	0	N/A	N/A

Note: The estimated risk and hazard impacts from these sources would be expected to be substantially lower when site specific Health Risk Screening Assessments are conducted.

The screening level map is not recommended for evaluating sensitive land uses such as schools, senior centers, day cares, and health facilities.

Appendix B

Geotechnical Investigation and Addendum

CREEKWOOD

GEOTECHNICAL INVESTIGATION

PROPOSED RESIDENTIAL DEVELOPMENT

270 & 280 CASA GRANDE ROAD

PETALUMA, CALIFORNIA

APN: 017-040-008 & 015

PREPARED FOR:

FALCON POINT ASSOCIATES, LLC

C/O: DRG BUILDERS

ATTN: DOYLE HEATON

DOYLE@DRGBUILDERS.com

PREPARED BY:

PJC & ASSOCIATES, INC.

600 MARTIN AVENUE, SUITE 210

ROHNERT PARK, CA 94928

JOB NO. 9852.01

PJC & Associates, Inc.
Consulting Engineers & Geologists

September 21, 2020 Job No. 9852.01

Falcon Point Associates, LLC
c/o: DRG Builders
Attn: Doyle Heaton
doyle@drgbuilders.com

Subject: Geotechnical Investigation
Proposed Residential Development
270 & 280 Casa Grande Road
Petaluma, California
APN: 017-040-008 & 015

Dear Doyle:

PJC & Associates, Inc. (PJC) is pleased to submit this report presenting the results of our geotechnical investigation for the proposed residential subdivision located at 270 & 280 Casa Grande Road in Petaluma, California. The location of the site is shown on the Site Location Map, Plate 1. The site corresponds to the geographic coordinates of 38.2414° N and 122.5965° W, according to Google Earth Imagery. Our services were completed in accordance with our proposal for geotechnical engineering services, dated March 24, 2020, and your authorization to proceed with the work, dated May 27, 2020. This report presents opinions and recommendations regarding the geotechnical engineering aspects of the design and construction of the proposed project. Based on the results of this study, we judge that the project is feasible from a geotechnical engineering standpoint provided the recommendations and criteria presented in this report are incorporated in the design and carried out through construction.

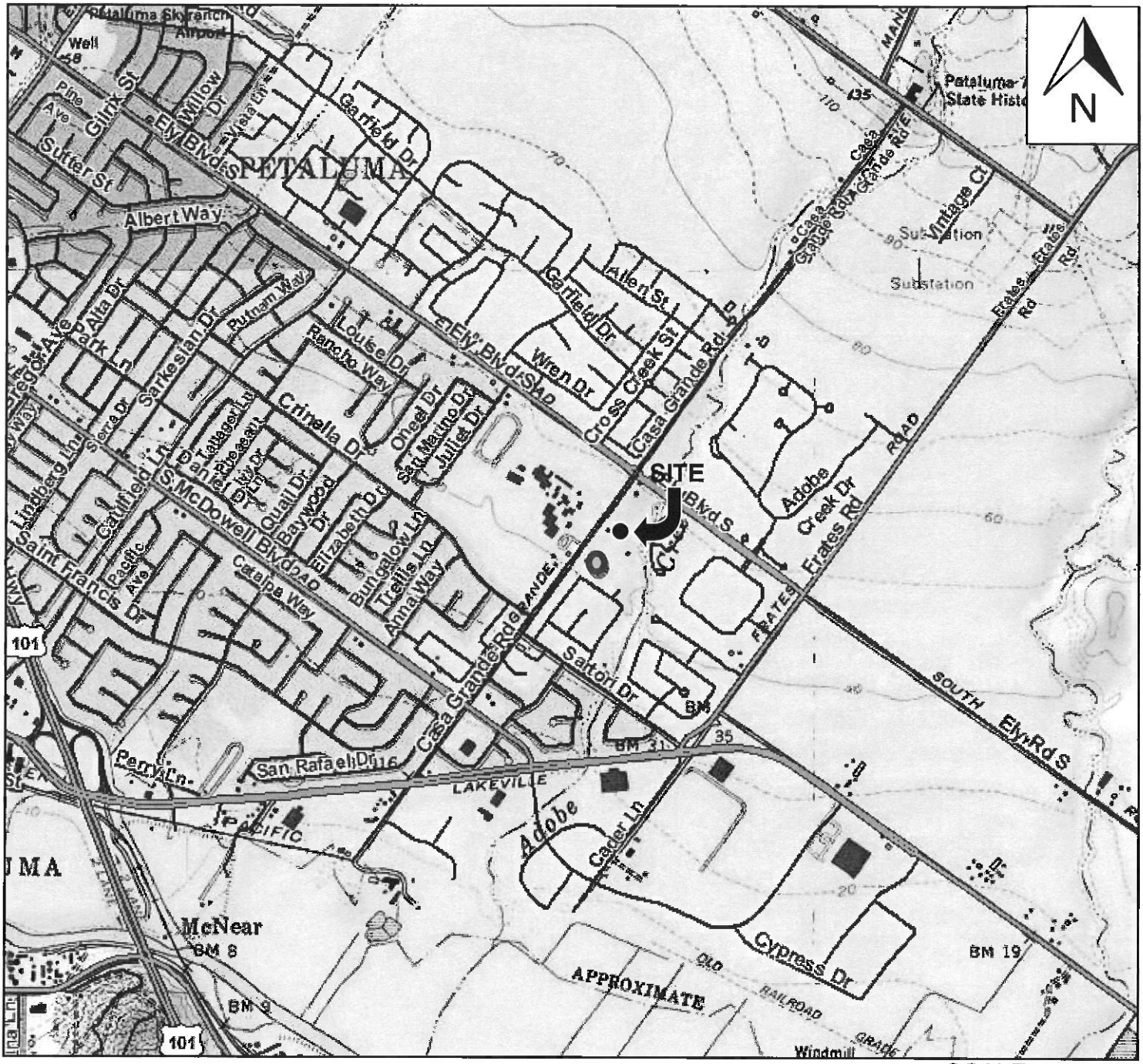
We appreciate the opportunity to be of service. If you have any questions concerning the content of this report, please contact us.

Sincerely,

PJC & ASSOCIATES, INC.

Patrick J. Conway
Geotechnical Engineer
GE 2303, California

PJC:bc



SCALE: 1:24,000

REFERENCE: USGS PETALUMA RIVER, CALIFORNIA 7.5 MINUTE QUADRANGLE, DATED 1978.

PJC & Associates, Inc. Consulting Engineers & Geologists	SITE LOCATION MAP PROPOSED SUBDIVISION 270 & 280 CASA GRANDE ROAD PETALUMA, CALIFORNIA	PLATE 1
	Proj. No: 9852.01 Date: 8/20 App'd by: PJC	

TABLE OF CONTENTS

GEOTECHNCIAL INVESTIGATION
PROPOSED RESIDENTIAL SUBDIVISION
270 & 280 CASA GRANDE ROAD
PETALUMA, CALIFORNIA

1. PROJECT DESCRIPTION

Based on a preliminary site development plan dated October 30, 2019 and information provided by you, it is our understanding that the subdivision will consist of the development of 36 residential lots. The development will consist of the construction of single-family residences expected to be one or two-story, wood-frame structures with post-tension concrete slab-on-grade floors. The project will also include the construction of a new asphaltic concrete paved roadways and driveways and serviced by underground municipal utilities.

Structural loading information was not available at the time of this report. For our analysis, we assume that structural loads for the buildings will be relatively light, with dead plus live continuous wall loads less than two kips per lineal foot, and dead plus live isolated column loads less than 50 kips. If these assumed loads vary significantly from the actual loads, we should be consulted to review the actual loading conditions, and if necessary, revise the recommendations of this report.

The project site is situated on nearly level terrain. Based on the site topography, we anticipate that site grading and earthwork will consist of cuts and fills of approximately three feet or less to upgrade the existing site soils, achieve the desired finish pad and roadway grades and to provide adequate gradients for site drainage. However, grading for the stormwater retention basin is shown to consist of cuts and fills up to seven feet and less. We do not anticipate that retaining walls will be required for the project.

2. PURPOSE AND SCOPE OF SERVICES

The purpose of this investigation was to evaluate the subsurface conditions at the site and develop geotechnical criteria for design and construction of the proposed project as described above. Specifically, the scope of our services consisted of the following:

a. Drilling eight exploratory boreholes to depths up to 50.5 feet below the existing ground surface with a truck mounted drill rig to characterize the soil and groundwater conditions underlying the site. Our project engineer was on site to observe the drilling, log the materials encountered in the boreholes, and obtain representative samples for visual classification and laboratory testing.

b. Laboratory observation and testing were performed on representative soil samples obtained during the course of the field investigation to assist in the evaluation of the engineering properties of the soils underlying the site.

c. Review seismological and geologic literature on the site area, discuss site geology and seismicity, and evaluate potential geologic hazards and earthquake effects (i.e., liquefaction, fault ground rupture, settlement, lurching and lateral spreading, densification, expansive soils, etc.).

d. Perform engineering analyses to develop geotechnical recommendations for site preparation and grading, foundation type(s) and design criteria, support of concrete slabs-on-grade, preliminary pavement design criteria, site surface and subsurface drainage and construction considerations.

e. Preparation of this formal report summarizing our work on the project.

3. SITE CONDITIONS

a. General. The subject property is located southeast of downtown Petaluma in a fully developed residential area comprised of single-family residences, Casa Grande High School, a Petaluma Ecumenical property and isolated open fields. The project site is located on the southeast side of Casa Grande Road on a partially developed lot. At the time of our investigation on June 29, 2020, the site was occupied by two existing single-family residences and open grassland. It is planned to demolish the residence at 280 Casa Grande Road while the residence at 270 Casa Grande Road will remain. The site is bounded by Casa Grande Road to the west, a planned development to the south, Adobe Creek to the east, and a Petaluma Ecumenical property to the north.

b. Topography. The site is located near the southern end of Petaluma Valley. The project site is located on nearly level terrain. According to the USGS Petaluma River California 7.5 Minute Quadrangle, the site is located near an elevation of 48 feet above mean sea level (MSL).

c. Drainage. Site drainage consists of sheet flow and surface infiltration which migrates in an easterly direction towards Adobe Creek which borders the eastern margin of the property. An evaluation of the flood potential of Adobe Creek is beyond the scope of this report and is being performed by others.

4. GEOLOGIC SETTING

The site is located in the Coast Ranges Geomorphic Province of California. This province is characterized by northwest trending topographic and geologic features, and includes many separate ranges, coalescing mountain masses and

several major structural valleys. The province is bounded on the east by the Great Valley and on the west by the Pacific Ocean. It extends north into Oregon and south to the Transverse Ranges in Ventura County.

The structure of the northern Coast Ranges region is extremely complex due to continuous tectonic deformation imposed over a long period of time. The initial tectonic episode in the northern Coast Ranges was a result of plate convergence which is believed to have begun during late Jurassic time. This process involved eastward thrusting of oceanic crust beneath the continental crust (Klamath Mountains and Sierra Nevada) and the scraping off of materials that were accreted to the continent (northern Coast Ranges). East-dipping thrust and reverse faults were believed to be the dominant structures formed.

Right lateral, strike slip deformation was superimposed on the earlier structures beginning in mid-Cenozoic time, and has progressed northward to the vicinity of Cape Mendocino in Southern Humboldt County. Thus, the principal structures south of Cape Mendocino are northwest-trending, nearly vertical faults of the San Andreas system.

According to the Geologic Map of the Petaluma River Quadrangle prepared by the California Geologic Survey (CGS), the site is underlain by Holocene aged alluvial fan deposits (Qhf). These deposits consist of sand, gravel, silt and clay deposited by streams within canyons emanating onto alluvial valley floors. Our subsurface investigation confirmed the project site is underlain by alluvial fan deposits.

5. FAULTING

Geologic structures in the region are primarily controlled by northwest trending faults. No known active fault passes through the site. Based on published Geologic Maps reviewed, the site is not located in the Alquist-Priolo Earthquake Fault Studies Zone. Based on our review of the Geologic Map of the Petaluma River California 7.5 Minute quadrangle by the California Geologic Survey, a trace of the Tolay Fault exists approximately nine-tenths of one mile northeast of the site. However, the State of California has not classified this particular fault trace as an active fault source during Holocene time (the past 11,000 years).

According to the USGS National Seismic Hazard Map (2008), the three closest known active faults to the site are the Rodgers Creek, the West Napa and the San Andreas faults. The Rodgers Creek fault is located 2.27 miles to the northeast, the West Napa fault is located 15.55 miles to the east and the San Andreas fault is located 16.73 miles southwest of the site. Table 1 outlines the nearest known active faults and their associated maximum magnitudes.

TABLE 1
CLOSEST KNOWN ACTIVE FAULTS

Fault Name	Distance from Site (Miles)	Maximum Earthquakes (Moment Magnitude)
Rodgers Creek	2.27	7.33
West Napa	15.55	6.70
San Andreas	16.73	8.05

Reference: USGS National Seismic Hazard Map (2008).

6. SEISMICITY

The site is located within a zone of high seismic activity related to the active faults that transverse through the surrounding region. Future damaging earthquakes could occur on any of these fault systems during the lifetime of the proposed project. In general, the intensity of ground shaking at the site will depend upon the distance to the causative earthquake epicenter, the magnitude of the shock, the response characteristics of the underlying earth materials and the quality of construction. Seismic considerations and geologic hazards are discussed in Section 8 of this report.

7. SUBSURFACE CONDITIONS

a. Soils. The subsurface conditions at the project site were investigated by drilling eight exploratory boreholes (BH-1 through BH-8) to depths up to 50.5 feet below the existing ground surface. The approximate borehole locations are shown on the Borehole Location Plan, Plate 2. The boreholes were drilled to observe the soil and groundwater conditions underlying the site and collect samples for visual classification and laboratory testing. Complete lithologic descriptions of the subsurface conditions encountered and approximate contacts are presented on the log of the boreholes, Plates 3 through 10. The soils were classified in accordance with the Unified Soil Classification System, as explained on Plate 11. The drilling and sampling procedures and descriptive borehole logs are included in Appendix A of this report. The laboratory procedures are included in Appendix B.

The exploratory boreholes generally encountered fine grained alluvial deposits which extended to the maximum depths explored. The heterogeneous alluvial deposits consisted of sandy clays, gravelly clays and clayey sands. The cohesive alluvium appeared slightly moist to saturated, stiff to hard, exhibited medium to high plasticity characteristics and included intermittent gravel lenses. The clayey sand appeared saturated, medium dense and fine to coarse grained. Complete lithologic descriptions of the strata encountered are presented on the Logs of the Boreholes, Plates 3 through 10.

b. Groundwater. At the time of our subsurface exploration on June 29, 2020, phreatic groundwater was encountered at a depth of 16.0 feet below the ground surface in BH-1, 13.5 feet below the ground surface in BH-5 and 12.0 feet below the ground surface in BH-7. Groundwater was not encountered in the other boreholes. The phreatic groundwater table rises and falls by several feet throughout the year due to seasonal rainfall and other factors. The phreatic groundwater should not detrimentally impact the project. Perched groundwater zones near the surface are common in the area due to seasonal rainfall, but usually dissipates following the rainy season.

c. Hydrologic Soil Group. Based on our subsurface findings, we judge that the surface and near surface site soils have very low infiltration rates when thoroughly saturated. According to the Natural Resources Conservation Service (NRCS) guidelines, we judge the site soils should be designated as the NRCS Hydrologic Soil Group D.

8. GEOLOGIC HAZARDS AND SEISMIC CONDITIONS

The site is located within a region subject to a high level of seismic activity. Therefore, the site could experience strong seismic ground shaking during the designed lifetime of the project. The following discussion reflects the possible geologic hazards and earthquake effects which could result in damage to the proposed structures and improvements at the site.

a. Fault Rupture. Rupture of the ground surface could occur along known active fault traces. No evidence of existing faults or previous ground displacement on the site due to fault movement is indicated in the geologic literature or field exploration. Therefore, the likelihood of ground rupture at the site due to faulting is considered to be low.

b. Ground Shaking. The site has been subjected in the past to ground shaking by earthquakes on the active fault systems that traverse the region. It is believed that earthquakes with significant ground shaking will occur in the region within the next several decades. Therefore, it must be assumed that the site will be subjected to strong ground shaking during the design life of the project. This should be taken into account in the design and construction of the project.

c. Liquefaction. The project site is not located in the State Designated seismic hazard liquefaction zone (Green Zone). Based on our review of the Association of Bay Area Governments (ABAG), interactive liquefaction susceptibility map, the site is considered to have moderate susceptibility to liquefaction during or immediately following a significant seismic event.

Liquefaction is a seismic hazard that occurs in saturated, low density, predominantly granular soils encountered below the phreatic groundwater. In general, these loose materials experience a rapid, temporary loss in shear strength due to an increase in pore water pressure in response to strong earthquake ground shaking. Upon dissipation of pore water pressures following shaking, there is reduction in the void ratio of the impacted soil particles that can cause differential ground settlement and lateral spreading. Low density, fine-grained sandy soils below the phreatic ground water are most susceptible to liquefaction. However, recent case studies have shown that soft silts, low plasticity clays and loose gravels with limited drainage paths are also susceptible to liquefaction. Bedrock materials and plastic clayey soils with a liquid limit (LL) greater than 37 and a plasticity index greater than 18 are generally not known to be prone to liquefaction. In addition, soil deposits older than Holocene time (11,000 years) are generally not prone to liquefaction.

The occurrence of this phenomenon is dependent on many complex factors including the intensity and duration of ground shaking, groundwater elevation at time of shaking, particle size distribution, consistency/relative density of the soil, overburden stress, age of deposit, and many other factors.

In order to evaluate liquefaction potential at the site, our borehole designated BH-1 was drilled to a depth of 50 feet below existing grade. We analyzed the potential for liquefaction of the strata using the simplified method by Seed and Idriss (1971). Based on the results of our analyses, we judge that the strata at the site is not prone to liquefaction due to high relative densities of the granular soils and high plasticities of the clay soils.

d. Densification. The soils encountered in our exploratory boreholes appear to have relatively low densification potential. Therefore, based on the results of our investigation we judge that the risk of soil densification at the site is low.

e. Lateral Spreading and Lurching. Lateral spreading is normally induced by vibration of near-horizontal alluvial soil layers adjacent to an exposed face. Lurching is an action, which produces cracks or fissures parallel to streams or banks when the earthquake motion is at right angles to them. There are no overly-steep exposed faces or banks in close proximity to the project site. Therefore, we judge that the risk of the proposed project being impacted by lateral spreading or lurching is low.

f. Expansive Soils. Based on Atterberg Limits testing (PI=40), Expansion Index testing (EI=146), and our visual observations, the surface soils at the site exhibit high plasticity characteristics and a very high expansion

potential. Therefore, the site surface and near surface soils have a high expansion potential. The presence of expansive soils must be considered in design and construction of the project.

g. Stability and Erosion. The project site is not located in the State Designated earthquake induced landslide zone (Blue Zone). According to the Special Report 120 Regional Stability Map, the project site is located in a relatively stable area due to low slope inclinations (Area A). Terrain at the project is nearly level and is not considered to be prone to landsliding. No areas experiencing significant erosion or sediment transport were observed at the project site.

h. Corrosion. Based on our corrosion laboratory testing, it appears that the site soils are mildly alkaline with elevated chlorides, poor resistivity, very mildly elevated sulfates and redox is very mildly reduced. A detailed discussion and recommendations for extending the longevity of building materials and conduits buried in the site soils are presented on Plate 4a.

9. CONCLUSIONS

Based on the results of our geotechnical investigation, it is our professional opinion that the project is feasible from a geotechnical engineering standpoint provided the recommendations contained in this report are incorporated into the design and carried out through construction. The primary geotechnical concerns in design and construction of the project are the presence of weak and compressible surface soils and highly expansive surface soils.

The top two to three feet of surface soils are weak and compressible. Weak and compressible soils appear hard and strong when dry but can lose their strength rapidly and collapse from the loads of fills, foundations or slabs-on-grade as their moisture increases and approaches saturation. The moisture content of these soils can increase as a result of rainfall or when the natural upward migration of water vapor through the pores of the soils is impeded by fills, pavements, slabs-on-grade or foundations. Foundations, concrete slabs and pavements could experience intolerable differential settlement, distress and cracking if constructed on this material in its existing state. Furthermore, the differential settlement could cause architectural distress to the structures. This condition could be mitigated by engineering techniques consisting of subexcavation and replacement with a uniform layer of compacted engineered fill. As an alternative, foundations could be designed to resist deflections from ground movement.

Based on field observations, laboratory testing and our experience with similar projects in the area, the surface soils are highly expansive. Shrinking and/or swelling of expansive soils due to loss and increase in moisture content can cause distress and damage to concrete elements and architectural features of structures as well as asphaltic concretes and exterior flatwork.

To reduce the detrimental effects of these soils to within tolerable limits, we recommend the following geotechnical criteria for foundation support of the structures and support of exterior flatwork and pavements:

a. The proposed residential structures should be supported on a post-tension slab foundation designed to resist differential movement from weak and expansive soils. The upper 12 inches of soils beneath the structures should be scarified, moisture conditioned to three to five percent over optimum moisture content and compacted in accordance with the earthwork and grading section of this report.

b. The top 18 inches of soil beneath exterior flatwork, such as driveways and sidewalks, should consist of an imported low to non-expansive compacted engineered fill. If desired, asphaltic concrete pavements or lime treated soils could be supported by at least 18 inches of imported low to non-expansive compacted engineered fill or lime treated soils. By importing low to non-expansive engineered fill or the exterior flatwork may consist of non-structural slabs-on-grade. If the implementation of this method is not performed, then heave and cracking, which could be severe, should be expected.

c. If importing low to non-expansive fill material is undesirable for asphaltic concrete pavements and exterior flatwork, the upper 18 inches of soils beneath asphaltic concrete and exterior flatwork could be lime treated. Additionally, a moisture cut off wall could be constructed for the sidewalk curbs to prevent the infiltration of water into the subgrade material and reduce cyclic moisture variation as described in section 15 of this report. If the implementation of this method is not performed, then heave and cracking of these asphaltic concrete pavements should be expected, which could be severe.

The following sections present geotechnical recommendations and criteria for design and construction of the project.

10. GRADING AND EARTHWORK

a. Demolition and Stripping. The existing structures, except for the residence that is to remain at the site, should be demolished and removed off site. Following demolition and removal of the existing undesired structures, structural areas should be stripped of surface vegetation, old fills, debris, tree stumps, underground utilities, etc. These materials should be removed from the site. Some of the stripped soils, if suitable, could be stockpiled for later use in landscape areas. If underground utilities pass through the site, they should be removed in their entirety or rerouted where they exist outside an imaginary plane sloped two horizontal to one vertical (2H:1V)

from the outside bottom edge of the nearest foundation element. Any existing wells, septic systems and leach fields should be abandoned according to regulations set forth by the Sonoma County Health Department. Voids left from the removal of utilities or other obstructions should be replaced with compacted engineered fill under the observation of the project geotechnical engineer.

b. Excavation and Compaction. Following site stripping, excavation should be performed to achieve finish grades and/or to prepare areas to receive fill. Where imported fill is proposed for exterior flatwork and/or pavements, we recommend the upper 18 inches of expansive site soils be removed and replaced with low to non-expansive engineered fill. For the residential structures, we recommend that the weak surface soils within the proposed building envelopes be scarified to a depth of 12 inches moisture conditioned to three to five percent over optimum moisture content and recompacted to 85 percent relative compaction. All desiccation cracks should be closed. The lateral extent of the subexcavation/scarification should extend at least five feet beyond perimeter foundations of the structures and three feet beyond exterior flatwork and pavements.

The bottoms of subexcavations scheduled to receive fill should be scarified to a depth of eight inches, moisture conditioned to a moisture content of three to five percent over optimum moisture content, and recompacted to a minimum of 85 percent of the materials relative maximum dry density as determined by ASTM D-1557 test procedures. All desiccation cracks must be closed. All fill material should be placed and compacted in accordance to the recommendations presented in Table 2. Imported fill to be used on site and should be of a low to non-expansive nature and should meet the following criteria:

Plasticity Index	12 or less
Liquid Limit	38 or less
Percent Soil Passing #200 Sieve	between 15% and 35%
Maximum Aggregate Size	4 inches

The excavated material onsite, free of organics, and rock fragments greater than four inches would be suitable for use as engineered fill in landscape areas. In exterior flatwork and pavement areas, the top 18 inches should consist of low to non-expansive material approved by the geotechnical engineer prior to importing to the site or consist of lime treated soil.

All fills should be placed and compacted to the general recommendations provided below.

TABLE 2
SUMMARY OF COMPACTION RECOMMENDATIONS

Area	Compaction Recommendations*
General Engineered Fill (Native)	In lifts, a maximum of eight inches loose thickness, compact to a minimum of 90 percent at two to four percent over the optimum moisture content.
Import Fill (Low to Non-Expansive)	In lifts, a maximum of eight inches loose thickness, compact to a minimum of 90 percent relative compaction at or within two percent of the optimum moisture content.
Trenches (Import)	Compact to at least 90 percent relative compaction at or within two percent of the optimum moisture content.
Driveways and Parking Areas (Low to Non-Expansive)	Compact the top eight inches of subgrade and the entire base rock section to at least 95 percent relative compaction at or within two percent of optimum moisture content.

*All compaction requirements stated in this report refer to dry density and moisture content relationships obtained through the laboratory standard described by ASTM D-1557-12.

c. Temporary Slopes. We do not anticipate that a mass excavation will be required for the project. However, temporary slopes may be required for underground utility construction. Based on our findings, we recommend that temporary slopes should not exceed three fourths horizontal to one vertical (3/4H:1V). If steeper slopes are required, shoring should be used. The geotechnical engineer should observe the excavation to determine if steeper cut slopes are feasible or shoring is necessary during construction. Temporary cut slopes should not be left exposed longer than absolutely necessary. The highly plastic clay soils will dry out and be prone to planar shear failures.

Permanent cut and fill slopes for the stormwater retention basin should be no steeper than two horizontal to one vertical (2H:1V). Steeper slopes should be retained. The cut slopes will expose highly plastic clays. Over time, due to desiccation, the slopes likely will experience shallow failures unless treated. Therefore, maintenance of these slopes will be necessary. If optimum performance is required, 30 inches of compacted low to non-expansive fill should be placed over the slopes or retaining structures should be implemented.

A representative of PJC should observe all site preparation and fill placement. It is important that during the stripping, grading and scarification processes, a representative of our firm should be present to observe whether any undesirable material is encountered in the construction area.

Generally, grading is most economically performed during the summer months when on site soils are usually dry of optimum moisture content. Delays should be anticipated in site grading performed during the rainy season or early spring due to excessive moisture in on-site soils. Special and relatively expensive construction procedures should be anticipated if grading must be completed during the winter and early spring.

11. LIME TREATMENT OPTION

If the importation of low to non-expansive engineered fill material is undesirable for support of asphaltic concrete pavements and/or exterior flatwork, the expansive site soils should be lime treated. If post tension slab-on-grade foundations are used, it would not be necessary to lime treat soils within building pads.

a. Subexcavation. The highly expansive site soils beneath pavements and exterior slabs should be subexcavated to a depth of 18 inches below the subgrade elevation. The lateral extent of lime treatment should be a minimum of three feet beyond the edges of exterior concrete slabs and pavements. The bottoms of all of the subexcavations should be scarified to a depth of eight inches, moisture conditioned to a moisture content of three to five percent over optimum moisture content, and recompacted to a minimum of 88 percent of the materials relative maximum dry density.

b. Staging. A staging area for mixing of the highly expansive site soils and powdered lime should be established at the site. The highly expansive soils should be transported to the staging area and be moisture conditioned and amended with powdered lime. The lime treated site soils should then be transported back to the subexcavation and be spread in loose, eight inch thick lifts. We recommend that the lime-treated soils be moisture conditioned to two percent over optimum moisture content, and compacted to at least 90 percent relative compaction. With proper mixing equipment, it is possible that the on-site expansive clays could be treated in place. However, this should be evaluated in the field during grading and earthwork by the geotechnical engineer.

c. Lime Application. The expansive soils should be treated with high calcium or dolomitic quick lime. For preliminary budgeting purposes, we recommend a blend of at least five percent powdered lime (by dry weight) be evenly mixed with the site soils. Laboratory testing should be performed on trial samples to establish the percentage, by dry weight, of lime to be used. Ten days should be allowed to perform the testing prior to bidding and construction. The performance of lime stabilized soil is critically dependent on uniform mixing of the lime into the highly expansive soils and providing a proper curing period following amendment with the lime.

d. Quality Control. An experienced lime stabilization contractor, along with a comprehensive quality control program, is required to achieve the best possible stabilized soils. PJC should also perform laboratory testing during and following lime application. The powdered lime purchase order receipts should be provided to PJC to be kept on record.

12. FOUNDATION: POST-TENSION SLAB-ON-GRADE

The structures should be supported on post-tensioned mat slab foundations. The slabs should be designed in accordance with the following recommendations.

a. Vertical Loads. The post-tensioned mat slab should be designed to be rigid and capable of resisting both positive and negative moments in areas of non-uniform support due to differential settlement and the shrink and swell cycles of expansive clay soils. For design purposes, we recommend that the slab be designed to span areas of non-uniform support for full structural loading in both directions.

The post tension slab may be designed according to the following criteria, based on the method developed by the Post-Tensioning Institute (PTI) 2012 Edition and subsequent addendums.

i.	Edge Moisture Variation Distance (center lift) =	9.0 feet
ii.	Edge Moisture Variation Distance (edge lift) =	5.0 feet
iii.	Estimated Differential Shrink (center lift) =	1.50 inches
iv.	Estimated Differential Swell (edge lift) =	2.00 inches
v.	Allowable Bearing Capacity (dead plus live loads) =	1,500 psf
vi.	Soil modulus of subgrade reaction (K_s) =	50 pci
vii.	Modulus of elasticity of the soil =	3,000 psi

We recommend a minimum slab thickness of 12 inches. The slab perimeter should be provided with a 12-inch wide and 12-inch deep thicken edge to reduce edge drying and storm water intrusion under the slab. The post tension slab should be underlain by a four-inch layer of three-quarter inch gravel to act as a capillary break. To minimize moisture propagation through the slab, the gravel should be covered by a 15-mil thick vapor retarder. The membrane should be taped at all utility connections through the slabs to reduce the risk of moisture migration.

Concentrated loads within the slab should be supported by thickened beams. The soils within the building pad should be maintained at two to four percent over optimum at all times. The subgrade material should not be allowed to dry out prior to post-tensioned slab construction. If the slab subgrade is allowed to dry, all desiccation cracks should be moisture conditioned and closed.

Special precautions must be taken during the placement and curing of concrete slabs-on-grade. Excessive slump (high water-cement ratio) of the concrete and/or improper curing procedures and ad mixtures used during either hot or cold weather conditions will lead to excessive shrinkage, cracking or curling of the slabs. High water-cement ratios and/or improper curing also greatly increases water vapor transmission through the concrete. Concrete placement and curing operations should be performed in accordance with the American Concrete Institute (ACI) manual.

b. Post Construction Settlement. The majority of elastic settlement is expected to be small and occur during construction and placement of dead loads. Total elastic settlement is expected to be less than one inch. A maximum differential elastic settlement of one-half inch is anticipated.

c. Lateral Loads. Resistance to lateral forces may be computed by using base friction and passive resistance. A friction factor of 0.30 is considered appropriate between the bottom of the concrete structures and supporting soil. A passive pressure of 250 psf/ft may be used for structural elements embedded in the clay soils. The top 12 inches should be neglected for passive resistance due to desiccation and soil disturbance.

13. NON-STRUCTURAL CONCRETE SLABS-ON-GRADE

Non-structural concrete slabs-on-grade may be used for exterior flatwork provided the slabs are underlain by at least 18 inches of a low to non-expansive compacted fill or lime treated soils. The low to non-expansive fill should extend at least three feet beyond exterior slab edges and pavements.

All slab subgrades should be moisture conditioned and rolled to produce a firm and uniform subgrade. The slab subgrade should not be allowed to dry. Non-structural slabs should be at least five inches thick and underlain with a capillary moisture break consisting of at least four inches of clean, free-draining crushed rock or gravel. The rock should be graded so that 100 percent passes the one-inch sieve and no more than five percent passes the No. 4 sieve.

For slabs-on-grade with moisture sensitive surfacing, we recommend that a vapor retarder at least 15 mils thick be placed over the drain rock to prevent migration of moisture vapor through the concrete slabs. Control joints should be provided to

induce and control cracking. The slabs should be cast and maintained separate of adjacent foundations.

Special precautions must be taken during the placement and curing of concrete slabs-on-grade. Excessive slump (high water-cement ratio) of the concrete and/or improper curing procedures and ad mixtures used during either hot or cold weather conditions will lead to excessive shrinkage, cracking or curling of the slabs. High water-cement ratios and/or improper curing also greatly increases water vapor transmission through the concrete. Concrete placement and curing operations should be performed in accordance with the American Concrete Institute (ACI) manual.

14. SEISMIC DESIGN

Based on criteria presented in the 2019 edition of the California Building Code (CBC) and ASCE (American Society of Civil Engineers) STANDARD ASCE/SEI 7-16, the following minimum criteria should be used in seismic design:

a.	Site Class:	D
b.	Mapped Acceleration Parameters:	S_S = 1.754 g S_1 = 0.666 g
c.	Spectral Response Acceleration Parameters:	S_{MS} = 2.105 g S_{M1} = null
d.	Design Spectral Acceleration Parameters:	S_{DS} = 1.403 g S_{D1} = null

15. ASPHALTIC CONCRETE PAVEMENTS

An R-value of 5 was assigned to the site soils for the project. We recommend that the pavement base rock section should be underlain by at least 18 inches of low to non-expansive compacted engineered fill or lime treated soils to reduce the risk of severe cracking. Pavement sections should be constructed according to Table 3 if native soils are used to support the pavement. Table 4 may be used if the subbase consists of import or lime treated soils. If treatment if treatment is not implemented, cracking and high level of maintenance should be expected.

Pavement thicknesses were computed from Chapter 633 of the Caltrans Highway Design Manual and are based on a pavement life of 20 years. The Traffic Indexes (TI) used are judged representative of the anticipated traffic but are not based on actual vehicle counts. The actual traffic indexes should be determined and provided by the project civil engineer.

Prior to placement of the aggregate base material, the top eight inches of the pavement subgrade should be scarified to at least eight inches deep, moisture conditioned to within two percent of the optimum moisture content, and compacted to a minimum of 95 percent relative compaction. Aggregate base material should be spread in thin layers and compacted to at least 95 percent relative compaction to form a firm and unyielding base. The subgrade and aggregate base section should visually pass a firm unyielding proof-roll inspection.

The material and methods used should conform to the requirements of the Caltrans Standard Specifications, except that compaction requirements for the soil subgrade and aggregate baserock should be based on ASTM D-1557-12. Aggregate used for the base course should comply with the minimum requirements specified in Caltrans Standard Specifications, Section 26, for Class 2 aggregate base.

In general, the pavements should be constructed during the dry season to avoid the saturation of the subgrade and base materials, which often occurs during the wet winter months. If pavements are constructed during the winter and early spring, a cost increase relative to drier weather construction should be anticipated. The geotechnical engineer should be consulted for recommendations at the time of construction.

Where pavements will abut landscaped areas, water can seep below the concrete curb and into the base rock and subgrade within the pavement section. Continued saturation of the base rock leads to permanent wetness towards the lower elevation of the pavement where water ponds. Soft subgrade conditions and pavement damage can occur as a result.

Several precautionary measures can be taken to minimize the intrusion of water into the base rock; however, the cost to install the protective measures should be balanced against the cost of repairing damaged pavement sections. An alternative, which can be taken to extend the life of the pavement, would be to construct a cutoff wall along the perimeter edge of the pavement. The wall should consist of a lean concrete mix. The trench should be four inches wide and extend at least 36 inches deep.

Where trees are located adjacent to pavement areas, we recommend that a suitable impervious root barrier be included to minimize water mitigation into the pavement layer.

TABLE 3
PAVEMENT DESIGN FOR PAVEMENT AREAS
(Subgrade R-Value = 5)

Traffic Index	Asphaltic Concrete (in)	Class II Aggregate Base (in)
4.0	2.0	8.5
5.0	2.5	11.0
6.0	3.0	13.5
7.0	3.5	16.5

TABLE 4
PAVEMENT DESIGN FOR 18" LOW TO NON-EXPANSIVE ENGINEERED FILL OR LIME TREATED SOIL
(Subgrade R-Value = 50)

Traffic Index	Asphaltic Concrete (in)	Class II Aggregate Base (in)
4.0	2.0	6.0
5.0	2.5	6.0
6.0	3.0	6.0
7.0	3.5	7.0

16. UTILITY TRENCHES

Shallow excavations for utility trenches can be readily made with either a backhoe or trencher; larger earth moving equipment should be used for deeper excavations. We expect the walls of trenches less than five feet deep, excavated into engineered fill or native soils, to remain in a near-vertical configuration during construction provided no equipment or excavated spoil surcharges are located near the top of the excavation. If the trench extends deeper than five feet, then the trench walls may become unstable and may require shoring. All trenches should conform to the current CAL-OSHA requirements for worker safety.

The trenches may be backfilled with import soils and compacted to at least 90 percent of maximum dry density. The backfill soils should be moisture conditioned according to Table 2 of this report before compacting. Jetting should not be used.

Special care should be taken in the control of utility trench backfilling in structural areas. Substandard compaction may result in excessive settlements resulting in damage to structures constructed above them.

17. DRAINAGE

We recommend that the structures be provided with roof gutters and downspouts. Drainage control design should include provisions for positive surface gradients so that surface runoff is not permitted to pond, particularly adjacent to the building foundations, slabs or pavements. Surface runoff should be directed away

from foundations. If the drainage facilities discharge onto the natural ground, adequate means should be provided to control erosion and to create sheet flow. Care must be taken so that discharges from the roof gutter and downspout systems are not allowed to infiltrate the subsurface soils near the structures. Downspouts should be connected to closed conduits and discharged away from structures.

18. LIMITATIONS

The data, information, interpretations and recommendations contained in this report are presented solely as bases and guides to the preliminary geotechnical design of the proposed residential subdivision located at 270 & 280 Casa Grande Road in Petaluma, California. The conclusions and professional opinions presented herein were developed by PJC in accordance with generally accepted geotechnical engineering principles and practices. No warranty, either expressed or implied, is intended.

This report has not been prepared for use by parties other than the designers of the project. It may not contain sufficient information for the purposes of other parties or other uses. If any changes are made in the project as described in this report, the conclusions and recommendations contained herein should not be considered valid, unless the changes are reviewed by PJC and the conclusions and recommendations are modified or approved in writing. This report and the figures contained herein are intended for design purposes only. They are not intended to act by themselves as construction drawings or specifications.

Soil deposits may vary in type, strength, and many other important properties between points of observation and exploration. Additionally, changes can occur in groundwater and soil moisture conditions due to seasonal variations or for other reasons. Therefore, it must be recognized that we do not and cannot have complete knowledge of the subsurface conditions underlying the subject site. The criteria presented are based on the findings at the points of exploration and on interpretative data, including interpolation and extrapolation of information obtained at points of observation.

19. ADDITIONAL SERVICES

Upon completion of the project plans, they should be reviewed by our firm to determine that the design is consistent with the recommendations of this report. During the course of this investigation, several assumptions were made regarding building loads and development concepts. Should our assumptions differ significantly from the final intent of the project designers, our office should be notified of the changes to assess any potential need for revised recommendations. Observation and testing services should also be provided by PJC to verify that the intent of the plans and specifications is carried out during construction; these services should include observation of grading and earthwork, approving slab subgrade, approving pavement sections, and observing the installation of drainage

provisions. These services will be performed only if PJC is provided with sufficient notice to perform the work. PJC does not accept responsibility for items we are not notified to observe.

It has been a pleasure working with you on this project. Please call if you have any questions regarding the content of this report or if we may be of further assistance.

Sincerely,

PJC & ASSOCIATES, INC.

APPENDIX A
FIELD INVESTIGATION

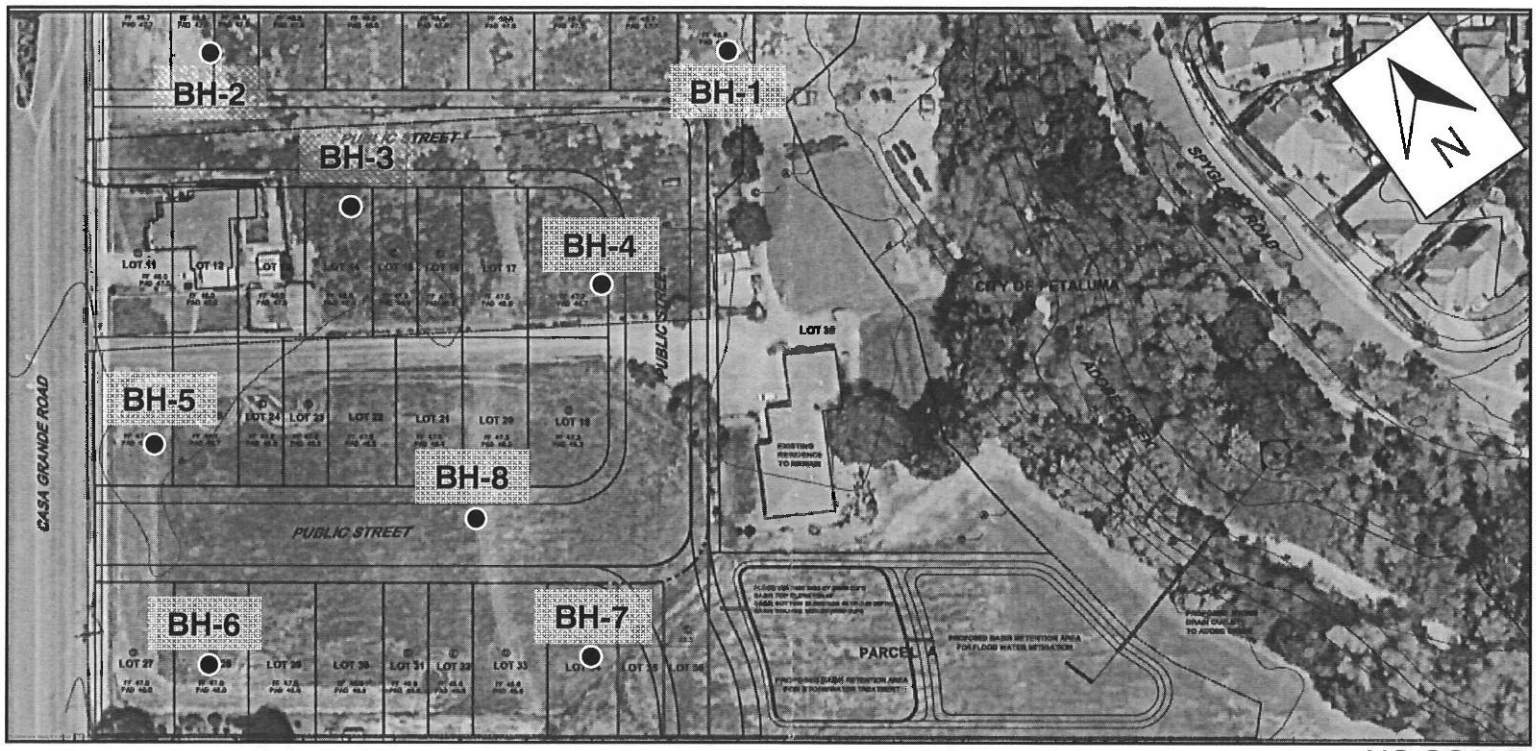
1. INTRODUCTION

The field program performed for this study consisted of drilling eight exploratory boreholes (BH-1 through BH-8) within the project area. The exploration was completed on June 29, 2020. The approximate borehole locations are shown on the Borehole Location Plan, Plate 2. Descriptive logs of the boreholes are presented in this appendix as Plates 3 through 10.

2. BOREHOLES

The boreholes were advanced using truck mounted drill rigs with hollow and solid stem flight augers. The drilling subcontractor on the project was Pearson Drilling of Forestville, California. The drilling was performed under the observation of a project engineer of PJC who maintained a continuous log of the soil conditions and obtained samples suitable for laboratory testing. The soils were classified in accordance with the Unified Soil Classification System, as explained on Plate 11.

Relatively undisturbed and disturbed samples were obtained from the exploratory boreholes. A 2.43 in I.D. California Modified Sampler was driven into the underlying soil using a 140 pound hammer falling 30 inches to obtain an indication in the field of the density of the soil and to allow visual examination of at least a portion of the soil column. A standard penetration sampler was used in the granular soils. Soil samples obtained with the split-spoon sampler were retained for further observation and testing. The number of blows required to drive the sampler at six-inch increments was recorded on the borehole logs. All samples collected were labeled and transported to PJC's office for examination and laboratory testing.



NO SCALE

EXPLANATION

- BOREHOLE LOCATION AND DESIGNATION

REFERENCE: PRELIMINARY SITE DEVELOPMENT PLAN, PREPARED BY STEPHEN J. LAFRANCHI & ASSOCIATES, INC., DATED OCTOBER 30, 2019.

PJC & Associates, Inc. Consulting Engineers & Geologists	BOREHOLE LOCATION PLAN PROPOSED SUBDIVISION 270 & 280 CASA GRANDE ROAD PETALUMA, CALIFORNIA	PLATE 2
	Proj. No: 9852.01 Date: 8/20 App'd by: PJC	

PJC & Associates, Inc.

Consulting Engineers & Geologists

BORING NUMBER BH-1

CLIENT Falcon Point Associates, LLC
PROJECT NAME Proposed Residential Subdivision
JOB NUMBER 9852.01
LOCATION 270 & 280 Casa Grande Road
DATE STARTED 6/29/20
COMPLETED 6/29/20
GROUND ELEVATION 48 ft
HOLE SIZE 6
DRILLING CONTRACTOR Pearson Drilling
GROUND WATER LEVELS:
DRILLING METHOD B-53 Hollow Stem Auger with 140lb hammer
AT TIME OF DRILLING 24.00 ft / Elev 24.00 ft
LOGGED BY B.C.
CHECKED BY PJC
AT END OF DRILLING ---
NOTES
AFTER DRILLING 16.00 ft / Elev 32.00 ft

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0		(CH) 0.0'-5.0'; SANDY CLAY; brownish black, slightly moist to moist, hard, high plasticity, many gravels. (Qhf) Expansion Index = 146	MC	15	4.5					
			MC	17			16			
5		(CH) 5.0'-9.5'; SANDY CLAY; brownish gray, moist, hard, high plasticity. (Qhf)	MC	25	4.5	96	22			
10		(CL) 9.5'-13.0'; SANDY CLAY, yellowish gray with white and orange mottling, moist, hard, low plasticity, with gravels and cobbles. (Qhf)	MC	31	4.5	95	15			
		(CL) 13.0'18.5'; SANDY CLAY, brownish gray, moist to saturated, hard, low plasticity, with gravels. (Qhf)								
15			SPT	44			14			
		(CH) 18.5'-29.5'; SANDY CLAY; light gray, saturated, stiff to very stiff, high plasticity. (Qhf)								
20			SPT	10			32			
25										

(Continued Next Page)

PLATE 3

PJC & Associates, Inc.

Consulting Engineers & Geologists

BORING NUMBER BH-1

CLIENT Falcon Point Associates, LLC **PROJECT NAME** Proposed Residential Subdivision

JOB NUMBER 9852.01 **LOCATION** 270 & 280 Casa Grande Road

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
25		(CH) 18.5'-29.5'; SANDY CLAY; light gray, saturated, stiff to very stiff, high plasticity. (Qhf) *(continued)*	MC		24	2.5	87	32				
30		(SC) 29.5'-34.0; CLAYEY SAND; dark brownish gray, saturated, medium dense, fine to coarse grained, with gravels (Qhf)	MC		41		105	20				33
35		(CL) 34.0'-50.5'; SANDY CLAY, moderate gray, saturated, stiff to very stiff, medium plasticity, trace gravels. (Qhf)	SPT		15			21				
40			MC		31	2.5	94	26				
45			MC		22	2.5	93	28				
50			MC		14	1.5	95	27				

Bottom of borehole at 50.5 feet.

PLATE 3

PJC & Associates, Inc.

Consulting Engineers & Geologists

BORING NUMBER BH-2

CLIENT Falcon Point Associates, LLC
PROJECT NAME Proposed Residential Subdivision
JOB NUMBER 9852.01
LOCATION 270 & 280 Casa Grande Road
DATE STARTED 6/29/20
COMPLETED 6/29/20
GROUND ELEVATION 48 ft
HOLE SIZE 6
DRILLING CONTRACTOR Pearson Drilling
GROUND WATER LEVELS:
DRILLING METHOD B-53 Solid Stem Auger with 140lb Hammer
AT TIME OF DRILLING --- Not Encountered
LOGGED BY B.C.
CHECKED BY PJC
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0		(CH) 0.0'-5.5'; SANDY CLAY; brownish black, slightly moist to moist, hard, high plasticity, few gravels. (Qhf)								
			MC	17			19			
5			MC	30	4.5	101	21			
		(CL) 5.5'-10.0'; SANDY CLAY; brownish gray, moist, hard, medium plasticity, trace gravels. (Qhf)								
			MC	37	4.0	97	25			
10		(CH) 10.0'-13.5'; SANDY CLAY; orangish brown, moist, hard, high plasticity. (Qhf)								
			MC	32	4.0	105	20			

Bottom of borehole at 13.5 feet.

PLATE 4

LAB SAMPLE NUMBER	SAMPLE ID	DESCRIPTION of SOIL and/or SEDIMENT	SOIL pH -log[H+]	NOMINAL MIN RESISTIVITY ohm-cm	ELECTRICAL CONDUCTIVITY µmhos/cm	SULFATE SO4 ppm	CHLORIDE Cl ppm
08414-1	CG1/P	Native Soil BH-1 – 8 @ 0'-5'	7.26	590	[1695]	210	345.0
Method	Detection	Limits --->	---	1	0.1	1	1

LAB SAMPLE NUMBER	SAMPLE ID	DESCRIPTION of SOIL and/or SEDIMENT	SALINITY ECe mmhos/cm	SOLUBLE SULFIDES (S=) ppm	SOLUBLE CYANIDES (CN=) ppm	REDOX mV	PERCENT MOISTURE %
08414-1	CG1/P	Native Soil BH-1 – 8 @ 0'-5'				+335.7	
Method	Detection	Limits --->	---	0.01	0.01	1	0.1

COMMENTS

Resistivity is under 1,000 ohm-cm, i.e., poor, but soil reaction (i.e., pH) is mildly alkaline; sulfate is very mildly elevated (i.e., @ >200 ppm), and chloride is also elevated (i.e., @ >100 ppm); this soil is only very mildly reduced (@ 300-400 mV); [see table below on the right for assigned point values and ranges]. CalTrans (CT) times to perforation of galvanized steel and full depth pitting times for unprotected steel (following Uhlig) for this soil are determined based on pertinent parameters [see table at left below]. Sulfate could have some very mild adverse impact on concrete, cement, mortar or grout; likewise, chloride could have some adverse impact on rebar or buried steel over the very long term. In principle, lime or cement treatment could be of benefit in that raising soil pH to the 7.5-8.5 range would increase perf and pitting times (as indicated in the table at left below). This improvement tends to be minimal for unprotected steel. Otherwise, to increase metals longevity any more in this soil would require steel upgrading or other actions. At times, structural strength considerations may require heavier gauge steel than is used in the presented examples such that perf and pitting to depth times can be beyond the specified life span. Where this is not the case, cathodic protection along with the coating or wrapping of steel assets can be one potential solution. Other options include increased and/or specialized engineering fill, use of a polymer coating, or use of plastic, fiberglass or concrete assets. Based on these results, some upgrading of concrete (e.g. to ASTM Type II) and steel (e.g. heavier gauge) would probably be desirable primarily due to the low resistivity which is indicative of a somewhat elevated total mineral salts content.

SAMPLE ID	CT 18 ga	CT 12 ga	2 mm (Uhlig)
CGR1/P	~ 21.5yrs	~47 yrs	~10 yrs
treated	~30 yrs	~70 yrs	~12 yrs

PARAMETER/ID	B1/SR
pH	Ø
Rs	8-10
SO4	Ø-1
Cl	Ø-3
Redox	Ø-3.5
TOTALS	8-17.5

PJC & Associates, Inc.

Consulting Engineers & Geologists

BORING NUMBER BH-3

CLIENT Falcon Point Associates, LLC **PROJECT NAME** Proposed Residential Subdivision

JOB NUMBER 9852.01 **LOCATION** 270 & 280 Casa Grande Road

DATE STARTED 6/29/20 **COMPLETED** 6/29/20 **GROUND ELEVATION** 48 ft **HOLE SIZE** 6

DRILLING CONTRACTOR Pearson Drilling **GROUND WATER LEVELS:**

DRILLING METHOD B-53 Solid Stem Auger with 140lb Hammer **AT TIME OF DRILLING** --- Not Encountered

LOGGED BY B.C. **CHECKED BY** PJC **AT END OF DRILLING** ---

NOTES **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		(CH) 0.0'-5.0'; SANDY CLAY; brownish black, slightly moist to moist, hard, high plasticity, few gravels. (Qhf) Bulk sample	AU									
2.5												
5.0		Bottom of borehole at 5.0 feet.										

PJC & Associates, Inc.

Consulting Engineers & Geologists

BORING NUMBER BH-4

CLIENT Falcon Point Associates, LLC
PROJECT NAME Proposed Residential Subdivision
JOB NUMBER 9852.01
LOCATION 270 & 280 Casa Grande Road
DATE STARTED 6/29/20
COMPLETED 6/29/20
GROUND ELEVATION 48 ft
HOLE SIZE 6
DRILLING CONTRACTOR Pearson Drilling
GROUND WATER LEVELS:
DRILLING METHOD B-53 Solid Stem Auger with 140lb Hammer
AT TIME OF DRILLING --- Not Encountered
LOGGED BY B.C.
CHECKED BY PJC
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) 0.0'-5.0; SANDY CLAY; brownish black, slightly moist to moist, hard, high plasticity, trace gravels. (Qhf)										
			MC		10			14				
			MC		18	4.5	97	19				
5		(CH) 5.0'-15.0'; SANDY CLAY; dark gray to yellowish gray, moist, very stiff to hard, high plastiicty, trace gravels. (Qhf)										
			MC		22	2.5	92	27				
10			MC		37	4.5	96	25				
15			MC		67	4.5	99	23				

Bottom of borehole at 15.0 feet.

PJC & Associates, Inc.

Consulting Engineers & Geologists

BORING NUMBER BH-5

CLIENT Falcon Point Associates, LLC
PROJECT NAME Proposed Residential Subdivision
JOB NUMBER 9852.01
LOCATION 270 & 280 Casa Grande Road
DATE STARTED 6/30/20
COMPLETED 6/30/20
GROUND ELEVATION 48 ft
HOLE SIZE 6
DRILLING CONTRACTOR Pearson Drilling
GROUND WATER LEVELS:
DRILLING METHOD B-53 Solid Stem Auger with 140lb Hammer
▽ AT TIME OF DRILLING 13.50 ft / Elev 34.50 ft
LOGGED BY L.C.
CHECKED BY PJC
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		(CH) 0.0'-6.5'; SANDY CLAY; brownish black, slightly moist to moist, very stiff, high plasticity, trace gravels. (Qhf)										
			MC		16	4.5	104	12	57	17	40	
			MC		17	4.5	96	21				
5			MC		26	4.0	98	23				
		(CH) 6.5'-14.5'; SANDY CLAY; brownish gray, moist to saturated, very stiff to hard, high plasticity, trace gravels. (Qhf)										
10			MC		51	4.5	94	28				
		▽										
15		(CH) 14.5'-15.5'; SANDY CLAY; yellowish gray, saturated, hard, high plasticity, few gravels. (Qhf)	MC		70	4.4U	107	18				

Bottom of borehole at 15.5 feet.

PLATE 7

PJC & Associates, Inc.

Consulting Engineers & Geologists

BORING NUMBER BH-6

CLIENT Falcon Point Associates, LLC
PROJECT NAME Proposed Residential Subdivision
JOB NUMBER 9852.01
LOCATION 270 & 280 Casa Grande Road
DATE STARTED 6/30/20
COMPLETED 6/30/20
GROUND ELEVATION 48 ft
HOLE SIZE 6
DRILLING CONTRACTOR Pearson Drilling
GROUND WATER LEVELS:
DRILLING METHOD B-53 Solid Stem Auger with 140lb Hammer
AT TIME OF DRILLING --- Not Encountered
LOGGED BY L.C.
CHECKED BY PJC
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0		(CH) 0.0'-7.0'; SANDY CLAY; brownish black, slightly moist to moist, hard, high plasticity, trace gravels and organics. (Qhf)								
			MC	23	4.5	97	21			
5			MC	31	4.5	98	23			
		(CH) 7.0'-10.0'; SANDY CLAY, gray, moist, hard, high plasticity. (Qhf)								
			MC	38	4.0	95	25			
10		(CH) 10.0'-13.5'; SANDY CLAY; grayish brown, moist, hard, high plasticity. (Qhf)								
			MC	89	4.5	111	16			

Bottom of borehole at 13.5 feet.

PLATE 8

PJC & Associates, Inc.

Consulting Engineers & Geologists

BORING NUMBER BH-7

CLIENT Falcon Point Associates, LLC **PROJECT NAME** Proposed Residential Subdivision

JOB NUMBER 9852.01 **LOCATION** 270 & 280 Casa Grande Road

DATE STARTED 6/30/20 **COMPLETED** 6/30/20 **GROUND ELEVATION** 48 ft **HOLE SIZE** 6

DRILLING CONTRACTOR Pearson Drilling **GROUND WATER LEVELS:**

DRILLING METHOD B-53 Solid Stem Auger with 140lb Hammer ▽ **AT TIME OF DRILLING** 11.50 ft / Elev 36.50 ft

LOGGED BY L.C. **CHECKED BY** PJC ▼ **AT END OF DRILLING** 12.00 ft / Elev 36.00 ft

NOTES **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0		(CH) 0.0'-5.0'; SANDY CLAY; brownish black, slightly moist to moist, hard, high plasticity, trace gravels and organics. (Qhf)	MC	13			15			
			MC	19	4.0	94	24			
5		(CH) 5.0-8.5'; SANDY CLAY; dark gray, moist, very stiff, high plasticity, trace gravels and organics. (Qhf)	MC	21	3.0	92	27			
10		(CH) 8.5'-14.5'; SANDY CLAY; yellow brown, moist to saturated, very stiff, high plasticity, trace gravels. (Qhf)	MC	40	4.5	94	29			
		▽▼	MC	34	2.2U	99	24			

Bottom of borehole at 14.5 feet.

PJC & Associates, Inc.

Consulting Engineers & Geologists

BORING NUMBER BH-8

CLIENT Falcon Point Associates, LLC
PROJECT NAME Proposed Residential Subdivision
JOB NUMBER 9852.01
LOCATION 270 & 280 Casa Grande Road
DATE STARTED 6/30/20
COMPLETED 6/30/20
GROUND ELEVATION 48 ft
HOLE SIZE 6
DRILLING CONTRACTOR Pearson Drilling
GROUND WATER LEVELS:
DRILLING METHOD B-53 Solid Stem Auger with 140lb Hammer
AT TIME OF DRILLING --- Not Encountered
LOGGED BY L.C.
CHECKED BY PJC
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) 0.0'-5.0'; SANDY CLAY; brownish black, slightly moist to moist, hard, high plasticity, few gravels. (Qhf)										
		Bulk sample	AU									
5												

Bottom of borehole at 5.0 feet.

MAJOR DIVISIONS					TYPICAL NAMES
COARSE GRAINED SOILS More than half is larger than #200 sieve	GRAVELS more than half coarse fraction is larger than no. 4 sieve size	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP		POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, POORLY GRADED GRAVEL-SAND MIXTURES
			GC		CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND MIXTURES
	SANDS more than half coarse fraction is smaller than no. 4 sieve size	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS, GRAVELLY SANDS
			SP		POORLY GRADED SANDS, GRAVEL-SAND MIXTURES
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC		CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS More than half is smaller than #200 sieve	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML		INORGANIC SILTS, SILTY OR CLAYEY FINE SANDS, VERY FINE SANDS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS OR LEAN CLAYS
			OL		ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

KEY TO TEST DATA

LL — Liquid Limit (in %)
PL — Plastic Limit (in %)
G — Specific Gravity
SA — Sieve Analysis
Consol — Consolidation

■ "Undisturbed" Sample
☒ Bulk or Disturbed Sample
□ No Sample Recovery

	Shear Strength, psf	Confining Pressure, psf	
*Tx	320	(2600)	Unconsolidated Undrained Triaxial
Tx CU	320	(2600)	Consolidated Undrained Triaxial
DS	2750	(2000)	Consolidated Drained Direct Shear
FVS	470		Field Vane Shear
*UC	2000		Unconfined Compression
LVS	700		Laboratory Vane Shear

Notes: (1) All strength tests on 2.8" or 2.4" diameter sample unless otherwise indicated
(2) * Indicates 1.4" diameter sample

APPENDIX B
LABORATORY INVESTIGATION

1. INTRODUCTION

This appendix includes a discussion of the test procedures of the laboratory tests performed by PJC for use in the geotechnical study. The testing was carried out employing, whenever practical, currently accepted test procedures of the American Society for Testing and Materials (ASTM).

Undisturbed and disturbed samples used in the laboratory investigation were obtained from various locations during the course of the field investigation, as discussed in Appendix A of this report. Identification of each sample is by borehole number, sample number and depth. All of the various laboratory tests performed during the course of the investigation are described below.

2. INDEX PROPERTY TESTING

In the field of soil mechanics and geotechnical engineering design, it is advantageous to have a standard method of identifying soils and classifying them into categories or groups that have similar distinct engineering properties. The most commonly used method of identifying and classifying soils according to their engineering properties is the Unified Soil Classification System as described by ASTM D-2487-83. The USCS is based on recognition of the various types and significant distribution of soil characteristics and plasticity of materials.

The index properties tests discussed in this report include the determination of natural water content and dry density, pocket penetrometer, grain-size distribution and Atterberg Limits testing.

a. Natural Water Content and Dry Density. Natural water content and dry density of the soils were determined, often in conjunction with other tests, on selected undisturbed samples. The samples were extruded and visually classified, trimmed to obtain a smooth flat face, and accurately measured to obtain volume and wet weight. The samples were then dried in accordance with the procedures of ASTM 2216-80 for a period of 24 hours in an oven, maintained at a temperature of 100 degrees C. After drying, the weight of each sample was determined and the moisture content and dry density calculated. The water content and dry density results are summarized on the borehole logs.

b. Pocket Penetrometer. Pocket Penetrometer tests were performed on all cohesive samples. The test estimates the unconfined compressive strength of a cohesive material by measuring the materials resistance to penetration by a calibrated, spring-loaded cylinder. The maximum capacity of the

cylinder is 4.5 tons per square foot (tsf). The results are summarized on the borehole logs.

c. Grain-Size Distribution. The gradation characteristics of a selected sample were determined in accordance with ASTM D422-63. The sample was soaked in water until individual soil particles were separated and then washed on the No. 200 mesh sieve. That portion of the material retained on the No. 200 mesh sieve was oven-dried and then mechanically sieved. The results are presented as Plate 12.

d. Atterberg Limits Determination. Liquid and plastic limits were determined on selected samples in accordance with ASTM D4318-83. The results of the limits are summarized on the borehole logs.

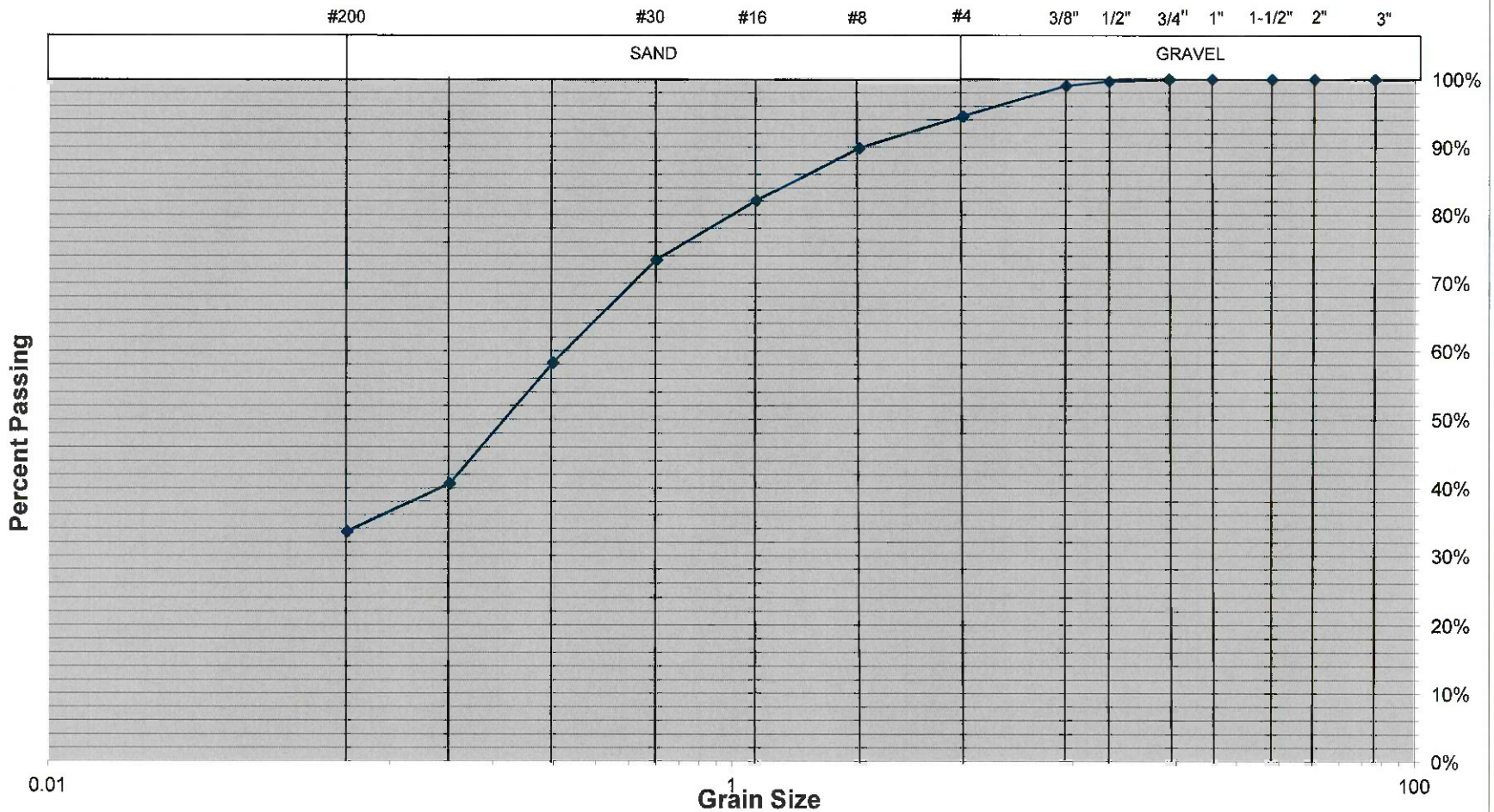
e. Expansion Index. In the Expansion Index test a sample is compacted into a metal ring and moisture conditioned to 40 to 60 percent of saturation and placed into a consolidometer. A vertical confining pressure is applied and the sample is inundated with distilled water. The deformation rate is recorded. The test was performed in accordance with ASTM D 4829.

3. ENGINEERING PROPERTIES TESTING

The engineering properties testing consisted of unconfined compression tests.

a. Unconfined Compression Test. Unconfined compression tests were performed on intact samples obtained in BH-5 and BH-7. In the unconfined compression test, the shear strength is determined by axially loading the sample under a slow constant strain rate until failure is obtained. Failure stress is defined as the maximum stress at ten percent strain. The results of the tests are presented on the borehole logs.

GRADATION CURVE



Sample: BH-1 at 30.0 feet; olive brown clayey sand (SC).

SIEVE ANALYSIS
PROPOSED SUBDIVISION
270 & 280 CASA GRANDE
PETALUMA, CALIFORNIA

PLATE 12

PJC

Proj. No: 9852.01

App'd by: PJC

Date: 8/2020

APPENDIX C
REFERENCES

1. "Foundations and Earth Structures" Department of the Navy Design Manual 7.2 (NAVFAC DM-7.2), dated May 1982.

2. "Soil Dynamics, Deep Stabilization, and Special Geotechnical Construction" Department of the Navy Design Manual 7.3 (NAVFAC DM-7.3), dated April 1983.

3. USGS Petaluma River, California Quadrangle 7.5-Minute Topographic Map, photo revised 1978.

4. Association of Bay Area Governments, Interactive Liquefaction Susceptibility Map, dated June 2009.

5. Geology for Planning in Sonoma County, Special Report 120, California Division of Mines and Geology, 1980.

6. California Building Code (CBC), 2019 edition.

7. ASCE STANDARD ASCE/SEI 7-16, prepared by the American Society of Civil Engineers.

8. USGS National Seismic Hazard Maps, 2008.

9. Geologic Map of the Petaluma River 7.5 Minute Quadrangle, prepared by the California Geological Survey, dated 2002.

10. Preliminary Site Development Plan, prepared by Steven J. LaFranchi & Associates, Inc., dated October 30, 2019.

PJC & Associates, Inc.
Consulting Engineers & Geologists

January 6, 2022 Job No. 9852.01

Falcon Point Associates, LLC
c/o DRG Builders
Attention: Doyle Heaton
3496 Buskirk Avenue
Pleasant Hill, CA 94523
doyle@drgbuilders.com

Subject: Addendum to Geotechnical Report
Proposed Residential Subdivision
270 & 280 Casa Grande Road
Petaluma, California
APN: 017-040-008 & 015

References: Report titled, "Geotechnical Investigation, Proposed Residential Subdivision, 270 & 280 Casa Grande Road, Petaluma, California," prepared by PJC & Associates, Inc., dated September 21, 2020.

Report titled "Geotechnical Report Update, Proposed Residential Subdivision, 270 & 280 Casa Grande Road, Petaluma, California, APN: 017-040-008 & 015," prepared by PJC & Associates, Inc., dated March 18, 2021.

Civil Engineering Plans, Sheets C-1 through C18, prepared by Steven J. Lafranchi & Associates, Inc., dated November 16, 2021.

Dear Doyle:

PJC & Associates, Inc. (PJC) is pleased to present an addendum to the previously completed geotechnical investigation report for the proposed residential subdivision located at 270 & 280 Casa Grande Road in Petaluma, California. The site corresponds to the geographic coordinates of 38.2414° N and 122.5965° W. Based on the results of our geotechnical investigation, it is our opinion that the project site can be developed from a geotechnical engineering standpoint provided the recommendations presented herein are incorporated in the design and carried out through construction.

1. PROJECT DESCRIPTION

Based on civil engineering plans dated November 16, 2021 and information provided by Steve Lafranchi with Steven J. Lafranchi & Associates, Inc., it is our understanding that the project has been expanded to include an additional 20 living units, totaling 62 living

units and a multi-use bridge and path. Based on our review the above referenced report and the referenced civil engineering plans, we judge that the revised scope does not change the recommendations and design criteria provided in our report for the design and construction of the additional living units. However, additional subsurface exploration will be necessary in order to provide recommendations and design criteria for the construction of the proposed multi-use bridge. It is our understanding that the bridge will consist of a eight foot wide, 90 foot long, prefabricated truss bridge. The bridge will likely be supported on a drilled cast-in-place foundation system.

Structural foundation loading information was not available at the time of this report. For our analysis, we anticipate that structural foundation loads will be light with dead plus live continuous wall loads less than two kips per lineal foot (plf) and dead plus live isolated column loads less than 50 kips. If these assumed loads vary significantly from the actual loads, we should be consulted to review the actual loading conditions and, if necessary, revise the recommendations of this report.

Based on grading and drainage plans, dated November 16, 2021, we anticipate that grading for the multi-use bridge will consist of cuts and fills of six feet and less in order to achieve the desired approach grades and provide adequate gradients for site drainage. We do not anticipate that engineered retaining walls will be required for the project. We anticipate that retaining walls may be required for the construction of the multi-use bridge.

We trust that this is the information you require at this time. If you have any questions concerning the content of this report, please feel free to call.

Sincerely,

PJC & ASSOCIATES, INC.

Patrick J. Conway
Geotechnical Engineer
GE 2303, California

PJC:ab

cc: Steve Lafranchi (steve@sjla.com)
Bobbi Wolff (bobbi@sjla.com
Nathan Fishman (Nathan@sjla.com)
Jarrett Galante (Jarrett@sjla.com)

Appendix C

Phase I Environmental Site Assessment

PHASE I
ENVIRONMENTAL SITE ASSESSMENT

FALCON POINT ASSOCIATES, LLC
CREEKWOOD HOUSING DEVELOPMENT PROJECT

JUNE 2022

PREPARED FOR:

Falcon Point Associates, LLC
3496 Buskirk Ave, Suite 104
Pleasant Hill, CA 94523

PREPARED BY:

Montrose Environmental Solutions
1801 7th Street, Suite 100
Sacramento, CA 95811
(916) 447-3479
www.montrose-env.com

PHASE I
ENVIRONMENTAL SITE ASSESSMENT

FALCON POINT ASSOCIATES, LLC
CREEKWOOD HOUSING DEVELOPMENT PROJECT

JUNE 2022

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SUMMARY

This Phase I Environmental Site Assessment (ESA) assesses potential hazardous materials issues on approximately 6.33 acres of land in the City of Petaluma, Sonoma County, California (Subject Property). It was prepared on behalf of DRG Builders who propose to develop the Subject Property for residential uses. The Phase I ESA includes a database search, a field survey, and an interview with current property owner Ron Malnati, as well as with Olivia Ervin, Environmental Planner for the City of Petaluma.

The Subject Property includes Assessor's Parcel Numbers (APN) 017-040-016 and 017-040-051, as well as part of APN 017-040-051; these parcels are located on either side of Adobe Creek, between Casa Grande and Spyglass roads in Sonoma County, California. The project includes demolition of one of two residences on the Subject Property and removal of the associated septic system; the residence to be removed is on APN 017-040-016, fronting Casa Grande Road. Because of it's age, there is the potential for lead-based paint or asbestos insulating material within the residence.

Current Use of Subject Property

The Subject Property is currently used for a combination of grazing and residential purposes.

Site Features of Concern

The bulk of the Subject Property was open and easily observed at the time of the inspection although a dense riparian corridor bordered both sides of Adobe Creek. No storage tanks, drums, buckets, contamination, stained soils, stressed vegetation, or unusual odors were observed.

Limiting Conditions and Data Gaps

The Subject Property is unmapped in the Sanborn Library; thus, no records were available for review.

Activity and Use Limitations

A review of "activity and use limitations" was not within the scope of this ESA but may be obtained through a title search.

Findings

The Phase I ESA of the Subject Property was prepared in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E 1527-21. The purpose of this ESA was to gather information to identify RECs as that term is defined in the ASTM E 1527-21 Standard. A REC is defined as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not recognized environmental conditions." No RECs, Controlled Recognized Environmental Conditions (CREC), or Historical Recognized Environmental Conditions (HREC) were identified in connection with the Subject Property.

Recommendations

The residence to be removed as part of the project fronts on Casa Grande Road and was constructed in the early 1950s, and therefore there is a potential for lead-based paint and asbestos-containing insulation within the home. Excavation and removal of the septic tank system has the potential to damage the tank or uncover defects in the tank which allow contamination to escape. Therefore, the following actions are recommended:

- Retain a qualified consultant to examine the residence and determine whether lead-based paint or asbestos-containing materials are present. If they are, implement appropriate demolition, containment, and disposal measures prior to and during residential demolition.
- When the septic tank is removed, inspect it for leaks. Should any be identified, remove contaminated soils, dispose of them appropriately, and complete soil testing to ensure that all contaminated soil has been disposed of.

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SECTION 1.0
INTRODUCTION

1.1 PURPOSE

This Phase I Environmental Site Assessment (Phase I ESA) has been prepared in conformance with the American Society for Testing and Materials (ASTM) Standard Practice E 1527-21, which specifies the appropriate inquiry requirement for the innocent landowner defense under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The purpose of this assessment is to identify Recognized Environmental Conditions (RECs) that may affect future uses of the Subject Property.

The term "Recognized Environmental Condition" (REC) refers to 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 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 includes hazardous substances or petroleum products even under conditions in compliance with relevant laws. 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. Additionally, the term "Historical Recognized Environmental Conditions" (HREC) refers to environmental conditions associated with the Subject Property, including a past release of any hazardous substance or petroleum product that have since been remediated, which in the past would have been considered a REC. This Phase I ESA additionally includes the analysis of the presence of "Controlled Recognized Environmental Conditions" (CREC), for hazardous substance releases that have been partially addressed through remediation, but where some contamination remains in place under certain risk-based restrictions or conditions. HRECs and CRECs are included in this Phase I ESA (ASTM, 2013).

1.2 SCOPE OF SERVICES

This Phase I ESA addresses the Subject Property and surrounding known sources of contamination, up to a 1.0-mile radius from the Subject Property. A site reconnaissance inspection of the Subject Property and adjacent properties was conducted and relevant database listings of hazardous material sites, waste generators, and underground storage tanks (USTs) as well as historical topographic maps and aerial photographs of the Subject Property were reviewed. This information, as well as interviews with owners, operators, occupants, and/or local government officials is presented herein, as well as evaluation of the collected information.

Physical testing of soil or groundwater is not within the scope of this assessment. Testing for asbestos containing building materials (ACM) and lead-based paint surveys are also not included in this assessment. Information was obtained for this Phase I ESA to comply with current ASTM guidelines. A review of "activity and use limitations" were not within the scope of this ESA but may be obtained through a title search.

1.3 LIMITATIONS AND EXCEPTIONS

No Phase I ESA can completely eliminate uncertainty regarding the potential for RECs in connection with a property. Conformance of this assessment to ASTM Standard Practice E 1527-21 will reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with the Subject Property. While every effort has been made to discover and interpret available historical and current information on the Subject Property within the time available, the possibility of undiscovered contamination remains. This report is a best-effort collection and interpretation of available information consistent with industry standards for the completion of Phase I ESAs.

1.4 METHODOLOGY

A variety of data sources were consulted in completing this Phase I ESA:

Historical Review

Previous land uses and history of the Subject Property were researched in an effort to identify RECs, HRECs, and CRECs at or near the Subject Property. Historical aerial photographs (**Appendix A**) and topographic maps (**Appendix B**) from different decades were examined for the presence of aboveground storage tanks, industrial buildings, gas station canopies and/or pump islands, as well as other indications of bulk hazardous material storage within the study area. Sanborn Fire Insurance Maps document historical property use through abbreviations and map symbols that identify commercial, residential, industrial, residential and other land uses (**Appendix C**). The City Directory Image Report may also indicate previous land uses of the Subject Property (**Appendix D**).

Database Searches

The Radius Map Report (**Appendix E**) includes searches for records of known storage tank sites and known sites of hazardous materials generation, storage, and/or release. Available information from federal, state, and local agency lists consists of: (a) known or potential hazardous waste sites and landfills; (b) sites currently under investigation for environmental violations; (c) sites that manufacture, generate, use, store, and/or dispose of hazardous materials or hazardous wastes; (d) sites that have underground storage tanks (USTs) and/or aboveground storage tanks (ASTs); and (e) sites with recorded violations of regulations concerning USTs and hazardous materials/hazardous wastes. The database search is intended to identify facilities that may have the potential to impact surface and subsurface conditions on the Subject Property.

Site Reconnaissance

The purpose of the site reconnaissance inspection is to examine the property for obvious physical indications of improper hazardous substance or petrochemical disposal, such as stained soil or asphalt, stressed vegetation, sumps, partially buried drums, bulk underground and aboveground fuel storage tanks, and other obvious signs of hazardous materials involvement.

Questionnaires

Whenever possible, Questionnaires are completed by the Subject Property owner/operator and supplemented with interviews of relevant government agencies and adjacent property owners to elicit specialized knowledge of the property.

1.5 DEVIATIONS AND DATA GAPS

ASTM Standard E 1527-21 requires any significant data gaps, deviations, and deletions from the ASTM Standard to be identified and addressed in the Phase I ESA. A significant data gap would be one that affected the ability to identify a REC on the Subject Property or adjacent properties.

Due to the location of the Subject Property, Sanborn Fire Insurance Maps were not available. However, aerial photographs and historic topographic maps were available for review of past uses of the Subject Property. Thus, the lack of Sanborn Fire Insurance Maps is not considered a significant data gap for this Phase I ESA.

SECTION 2.0

SITE DESCRIPTION AND RECONNAISSANCE

The Subject Property consists of several portions located at 256 and 280 Casa Grande Road, north of Adobe Creek, and a small portion located between the southern edge of Adobe Creek and north of Spyglass Road within the city of Petaluma, California (**Figures 1, 2 [**USGS 7.5-Minute Topographic Map**],** and **3**), as well as a portion of property located north of Spyglass Road. The Property is identified by Assessor's Parcel Numbers (APN) 017-040-016-000, 017-040-051-000, and 017-040-051 totaling 6.33 acres. The Subject Property is depicted on the Petaluma River, CA United States Geological Survey (USGS) map within an un-sectioned portion of Township 4 North, Range 7 West.

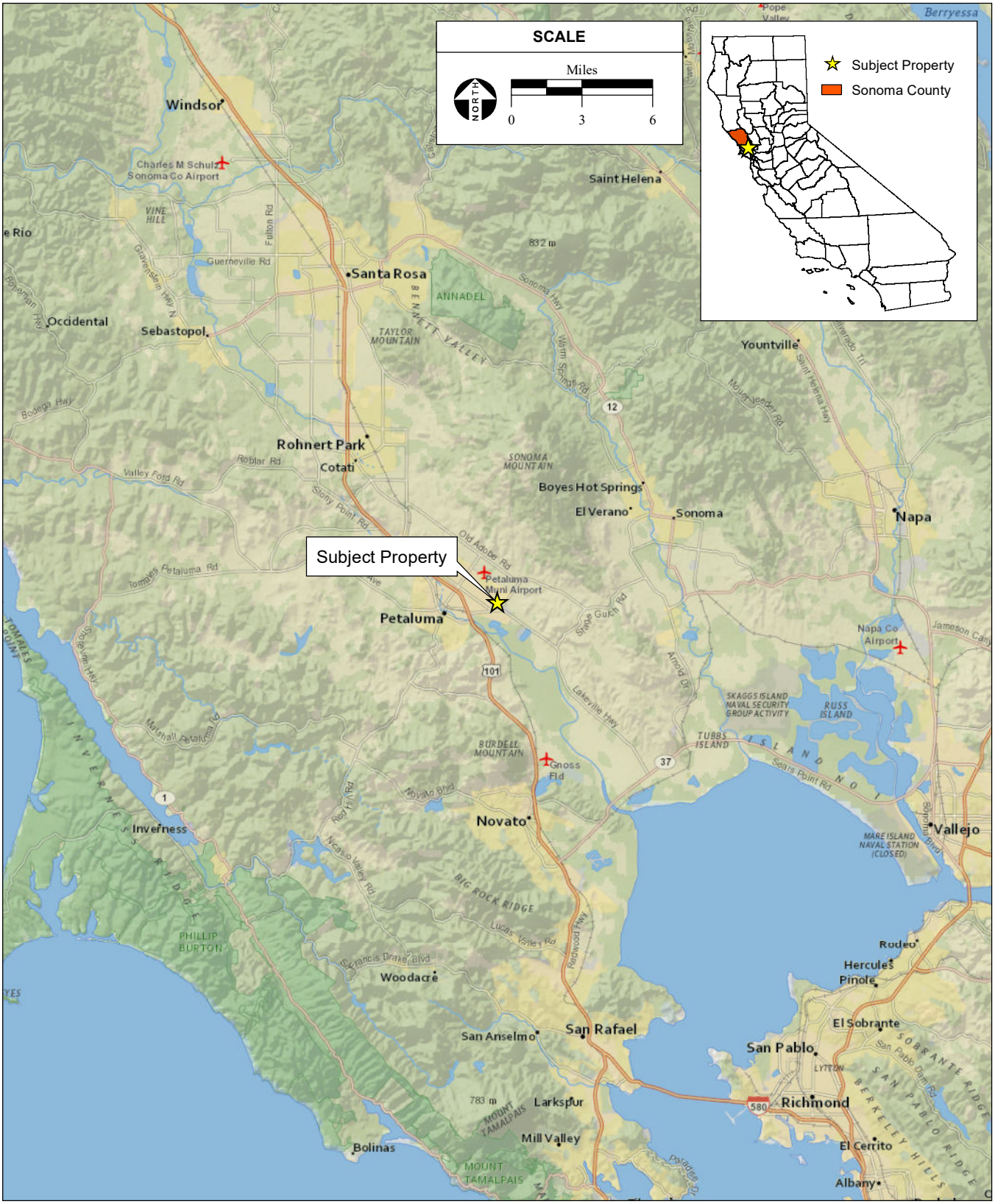
2.1 SITE AND VICINITY GENERAL CHARACTERISTICS

The 6.33-acre Subject Property contains two houses, a barn, and several outbuildings on the two parcels north of Adobe Creek, but the area south/east of Adobe Creek has no structures. A majority of the property is used for raising livestock, primarily sheep. Adobe Creek bisects the Subject Property and features a densely vegetated riparian corridor. The topography of the property is generally flat with a slight downslope to the southeast. The elevation on the Subject Property is at approximately 49 feet above mean sea level (amsl).

2.2 CURRENT USES OF ADJOINING PROPERTIES

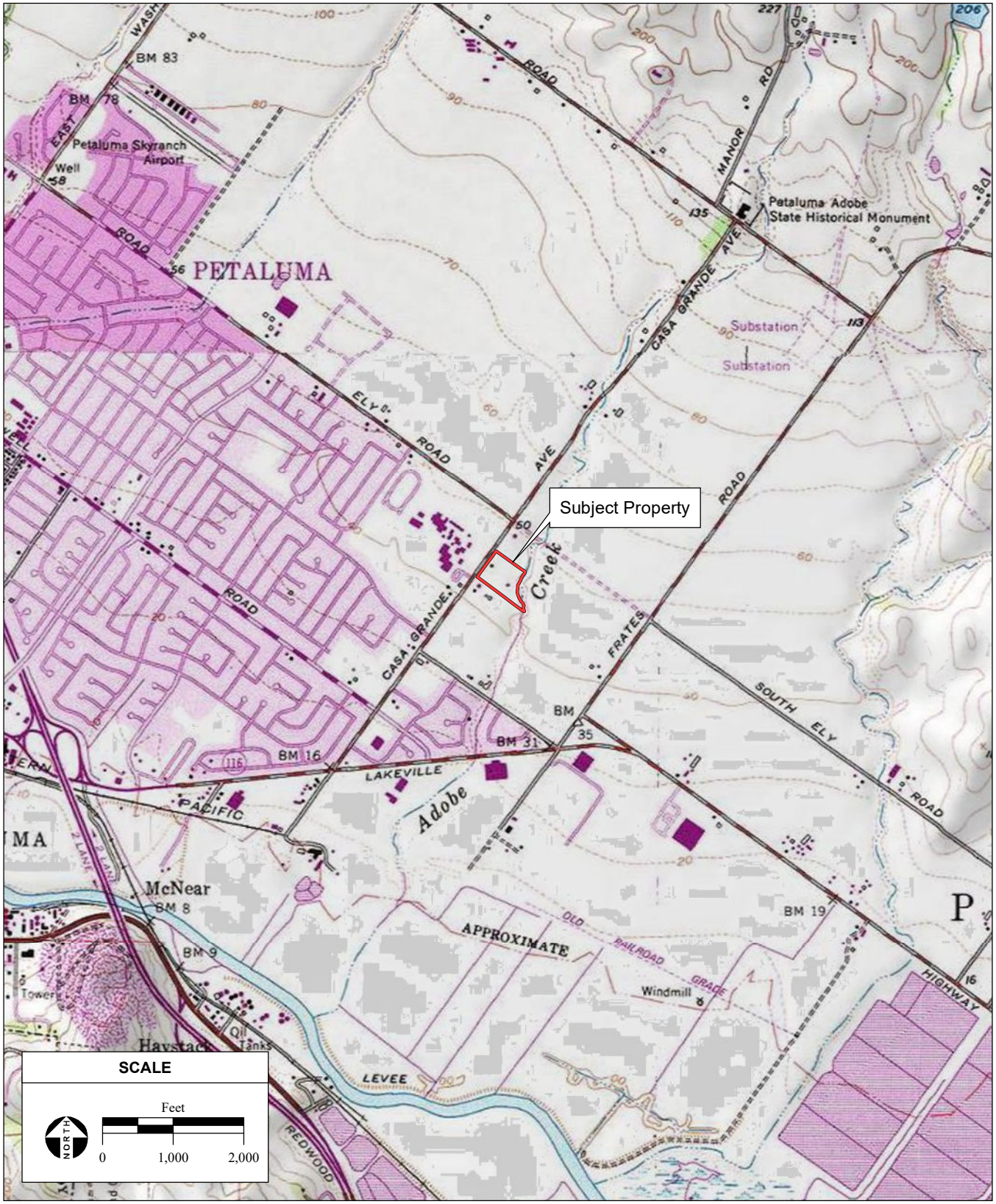
The current adjoining property uses are:

North: Senior housing center
South: Farm equipment repair facility and residential
East: Adobe Creek and residential
West: Casa Grande High School



SOURCE: ESRI, 2020; AES, 2/16/2021

Figure 1
Regional Location



SOURCE: "Petaluma River, CA" USGS 7.5 Minute Topographic Quadrangle, T4N R7W, Unsectioned Area of Petaluma River, Mt. Diablo Baseline & Meridian; ESRI, 2020; AES, 2/16/2021

Figure 2
Site and Vicinity

SOURCE: Maxar aerial photograph, 8/25/2019;
ESRI, 2020; AES, 2/16/2021

Figure 3
Aerial Photogrraph

2.3 HISTORIC USES OF THE SUBJECT PROPERTY

Aerial Photographs

Historic aerial photographs (**Appendix A**) were reviewed for information regarding past uses of the Subject Property and surrounding areas. Aerial photographs from 1942, 1952, 1968, 1970, 1973, 1982, 2006, 2009, 2012, and 2016 were reviewed; all photographs were at a 1"=500' scale but were of varying clarity.

Historical aerial images offer detailed review of previous land uses on the Subject Property and adjacent properties. In approximately 1942, the site was predominantly undeveloped land with the residence along Casa Grande Road already developed. The Subject Property remained unchanged until 1968 when the driveway and eastern residence was built to the east along Adobe Creek. The barn structure becomes more apparent in the 1973 aerial and was likely built between 1970 and 1973.
There is little development surrounding the Subject Property in each of the historic aerials up to 1973. The high school and some suburban development are revealed in the 1973 aerial indicating that the development in the region began around that time. In the 1982 aerial, additional dense suburban development is visible north and south of the Subject Property. Starting in the 2006 aerial, the subject property and immediate adjoining properties to the north and south are surrounded by suburban development, now the dominant land use in the area of the Subject Property. In 2009, the adjacent property to the north is developed with a senior housing facility. Except for the property immediately to the south, the does not appear to be any development of industrial or commercial land uses (such as gas stations) within the area of the Subject Property, except in the southwestern corner first visible in the 2006 aerial.

Historic Topographic maps

Historic USGS Topographic Quadrangles (**Appendix B**) were reviewed for information regarding past uses of the Subject Property. The 1914 and 1916 *Petaluma* and *Santa Rosa* quadrangles, as well as the *Petaluma and Santa Rosa* quadrangle maps from 1942 and 1944, the *Petaluma River*, *Petaluma Creek*, and *Glen Ellen* quadrangle maps from 1954, the *Petaluma River* and *Glen Ellen* quadrangle maps from 1968, the *Petaluma River* and *Glen Ellen* quadrangle maps from 1973, the *Petaluma River* and *Glen Ellen* quadrangle maps from 1980, and the *Petaluma River* and *Glen Ellen* quadrangle maps from 2012 were available for review. Regional development is first apparent starting on the 1968 map to the north west of the Subject Property and continues through the 2012 map.

Sanborn Fire Insurance Maps

The Subject Property is unmapped by Sanborn Fire Insurance Maps (**Appendix C**).

The City Directory Image Report

City Directory images were presented from 1971, 1977, 1982, 1987, 1992, 1995, 2000, 2005, 2010, 2014, and 2017. The physical address of 256 Casa Grande Road was not listed within the City Directory Image report however Peter and later Annie Allena are listed at 280 Casa Grande Road from 1973 to 2014 (**Appendix D**). Furthermore, there are no indications of industrial or commercial uses surrounding the Subject Property, as the only non-private owner listings are for schools and associated facilities and one listing identified as the State of California.

2.4 CURRENT USES OF THE SUBJECT PROPERTY

There are two residences on the Subject Property, both of which are currently occupied., as well as a barn and several outbuildings used for storage. The majority of the remainder of the site is undeveloped and used for raising livestock. There is a small garden and stand of fruit trees located between the residences and Adobe Creek.

Structures, Roads, Other Improvements on the Site

Besides the structures mentioned above, there is a gravel driveway that provides access to the Subject Property from Casa Grande Road north of Adobe Creek. The southern edge of Adobe Creek is fenced off, but the fence ends near the western edge of the Subject Property.

2.5 PHYSICAL FEAATURES

Hydrology and Geology

Surface water within the majority of the Subject Property flows southeast toward Adobe Creek. The rock stratigraphic unit of the Subject Property is of the Mesozoic era, Cretaceous system, and Washita Group series (EDR, 2019). The soil on the Subject Property is composed of Clear Lake clay, sandy substratum. Clear Lake Clay is a fine-grained soil composed of silt-clay materials and is poorly drained. This is a Class D soil with a very low infiltration rate and a high water table (**Appendix E**).

According to maps from California Geological Survey (OGS) and United States Geological Survey (USGS), the Subject Property is located in an area of high seismic activity hazard (USGS, 2018a & 2018b). According to California Geological Survey, the nearest fault line, the Rodgers Creek Fault, is located 3.7 miles to the east of the Subject Property (CGS, 2019).

Adobe Creek is the only riverine feature within the Subject Property, there are no wetland areas mapped on the Subject Property (USFWS, 2021).

Floodplain Map

The Federal Emergency Management Agency (FEMA) designates flood risk areas based on a parcel's location with respect to 100-year and 500-year floodplains. A 100-year flood is the flood elevation that has a 1 percent chance of being equaled or exceeded each year and a 500-year flood is the flood elevation that has a 0.2 percent chance of being equaled or exceeded each year. FEMA prepares Flood Insurance Rate Maps (FIRMs) that show the flood risk designations of lands throughout the U.S.

The majority of the Subject Property is located in Flood Zone AE. However, the northwestern edge of the Subject Property, along Casa Grande Rd, is located in Flood Zone X (FEMA, 2022; FEMA, 1990). Flood Zone AE refers to Areas subject to a one percent or greater annual chance of flooding in any given year. Base flood elevations are shown as derived from detailed hydraulic analyses. Base Flood elevations for the Subject Property range between 46 and 47 feet. Flood Zone X refers to Areas of minimal flood hazard from the principal source of flood in the area and determined to be outside the 0.2 percent annual chance floodplain. A copy of the FIRM is included in **Appendix G**.

Roadways

Regional access is provided by CA-116 directly north of the Subject Property. Local access is provided by Casa Grande Road, a two-lane northeast-southwest road that runs adjacent to the northwest border of Subject Property and Spyglass Road, which is a two-lane road running adjacent to the southern border of the Subject Property.

2.6 SITE RECONNAISSANCE OBSERVATIONS

The objective of the site reconnaissance was to identify current or historic hazardous materials involvement on the Subject Property. Hazardous materials involvement or signature environmental conditions include the presence or likely presence of any hazardous materials or petroleum products that indicate an existing release, past release, or a threat of release into any structure on the property, soil, or groundwater. Signs of possible hazardous materials involvement would include any indications of USTs existing on the Subject Property; stained soils and/or unusual odors originating from the Subject Property; indications of any excavation or removal of soils, including patched asphalt and large debris piles; and other obvious signs of hazardous materials involvement.

A site inspection of the two parcels at 256 and 280 Casa Grande Road was performed by David Pfuhler on April 15, 2020. Site reconnaissance included a pedestrian survey within the Subject Property, around the buildings on-site, and along the perimeter of the site. At the time of the survey, undeveloped portions of the site were largely covered in grasses and forbs. Out buildings were inspected for storage of potentially hazardous materials. There were no physical obstructions that limited site reconnaissance.

The Subject Property is bordered to the northwest by Casa Grande Road and the Casa Grande High School, to the east by Spyglass Road, to the south by fields and a farming equipment repair facility, and to the north by a senior residence community. The Subject Property is surrounded by primarily residential developments. A paved driveway provides access to the property from Casa Grande Road. A line of power poles follows Casa Grande Road.

Structures and property improvements observed on the Subject Property included two houses, barn structure, a driveway and parking area, and three storage out buildings. At the time of the site visit, all out buildings were inspected, but the residences were not to preserve the privacy of residents. The Adobe Creek corridor showed no evidence of contamination (e.g. oil slicks or debris). No petroleum products were observed. Upon inspection of the extant structures on the Subject Property, there were no floor drains or sumps, or heating or cooling or fuel sources present. There were no barrels, drums, indications of USTs, stained soils, or unusual odors, no indications of any excavation or removal of soils other than associated with golf course development, no patched asphalt or large debris piles observed on the site.

A second site inspection was performed by David Pfuhler and Charlane Gross on November 23, 2021. This second effort was limited to the newly added portion of APN 017-040-051, between Adobe Creek and Spyglass Road. The entire area was thickly covered in blackberry, shrubs, and trees, with the exception of the Adobe Creek channel, where gravel bars and overhanging vegetation were located. No RECs were observed.

A third site visit was conducted on April 7, 2022 to confirm that land use had not changed throughout the remainder of the property since the initial site inspection in 2020. At that time, it was noted that

both residences had septic systems, though the one associated with the residence bordering Casa Grande Road was inside a wood fence and so could not be mapped using GPS. The two small wooden sheds associated with the southern-most house near Adobe Creek contained yard maintenance equipment, a 2-gallon gasoline can, a backpack sprayer, buckets used for storage, and an unlabeled drum used for garbage. There was also an abandoned chicken coop, a pile of lumber, fence poles, and siding, and several concrete blocks stored for future use. There were several fruit trees and a garden plot east of the residence as well.

Site observations are summarized in **Table 1**.

TABLE 1
SUMMARY OF SITE OBSERVATIONS

Site Setting	Observations
Current Uses of Property	The site is primarily used as a residence with fields utilized for raising livestock. There is also a rented residential property.
Past Uses of Property	The property has contained residential properties and small, private agricultural fields throughout its developed history.
Current Uses of Adjoining Property	North: Casa Grande Senior Apartments
	South: Small equipment repair shop and residential housing
	East: Adobe Creek, rural residential
	West: Casa Grande High School
Current or Past Uses in the Surrounding Area	Rural residential, school, equipment repair shop
Geologic, Hydrogeologic, Hydrologic, and Topographic Conditions	The Subject Property is relatively flat. Adobe Creek bisects the Subject Property.
General Description of Structures	Two residences, a barn, and three out buildings used for storage related to the garden on the property and the livestock.
Roads	Casa Grande Road runs adjacent to the northwest of the Subject Property with a driveway providing access to the road, Spyglass Road follows the south/eastern border of the Subject Property.
Potable Water Supply	The EDR report shows the closest well 0.4 miles southwest of the Subject property. Potable water is provided by the City of Petaluma.
Sewage Disposal System	Both residences utilize septic systems with leech fields.
Waste Removal Services	The City of Petaluma contracts with Recology for waste removal.
Hazardous Substances and Petroleum Products in Connection with Identified Uses	There were a backpack sprayer and a 2-gallon gas can in a shed.
Storage Tanks and Associated Piping	No storage tanks were observed on site.
Odors	No strong, pungent, or noxious odors were observed.
Pools of Liquid	No pools of liquid were observed.
Drums (5 gal to 55 gal containers should be described)	There were two 55-gallon drums and several 5-gallon buckets located in sheds and used for storage.
Hazardous Substances and Petroleum Products Containers	There were a backpack sprayer and a 2-gallon gas can in a shed.
Unidentified Substance Containers	No unidentified substance containers were observed.
Polychlorinated Biphenyls (PCBs)	There were no transformers found on the property that could leak PCBs onto the Subject Property.
Pits, Ponds, or Lagoons	Adobe Creek bisects the site. No ponds, pits, or lagoons are within close proximity of the Subject property.
Stained Soil or Pavement	No stained soil or pavement was observed.
Stressed Vegetation	No stressed vegetation was observed.

Solid Waste	No solid waste was observed.
Waste Water	No waste water or other liquids were observed being discharged into a drain, ditch, underground injection system, or stream on or adjacent to the property.
Wells	According to the EDR report, there is one USGS well 0.5 miles northwest of the site. The report also lists five wells as recorded by the State database.
Septic System	Each of the residences utilize septic systems.

2.7 SITE PHOTOGRAPHS

Figures 4 provide photographs that show the site conditions of the Subject Property at the time of the site visits.

- The Subject Property contains multiple storage out buildings an example of one can be found on **Figure 4, Photo 1**.
- Between outbuildings the area is used for outdoor storage on the Subject Property (**Figure 4**, **Photo 2 and 3)**.
- A majority of the Subject Property is comprised of agricultural fields (**Figure 4**, **Photo 4**).
- Two residences occupy Subject Property (**Figure 4**, **Photo 4and 5**).
- The Subject Property contains small piles of domestic waste to be removed, the gas tank pictured was empty at the time of the first inspection, and has since been removed (**Figure 4**, **Photo 6**).
- That portion of the Subject Property that lies south/east of Adobe Creek is densely overgrown with blackberry, shrubs, and other vegetation (**Figure 4, Photo 7**).
- The Adobe Creek channel is also thickly overgrown (**Figure 4, Photo 8**).

PHOTO 1: Storage outbuilding.

PHOTO 2: Laydown area between outbuildings.

PHOTO 3: Additional laydown area used for livestock.

PHOTO 4: Agricultural fields with residence in background.

PHOTO 5: Main residence.

PHOTO 6: On-site waste to be removed. Gas tank was empty at inspection

SOURCE: AES, 2/16/2021

Figure 4
Site Photographs

SOURCE: Maxar aerial photograph, 9/14/2020; ESRI, 2021;
Montrose Environmental Solutions, 6/22/2022

Figure 5
Survey Finds

SECTION 3.0

INTERVIEWS AND USER-PROVIDED INFORMATION

3.1 LOCAL ENVIRONMENTAL RECORDS SOURCES

Local Environmental Agency

The Environmental Data Research, Inc. (EDR) report and the California GeoTracker Database General Viewer provided search and documentation of the available local hazardous materials data (SWRCB, 2021).

Department of Planning and Zoning

In May 2008 the City of Petaluma adopted the City of Petaluma General Plan 2025, which was revised January 11, 2012. The General Plan was designed for guiding local land use and development decisions. The city has the land use of the Subject Property designated as Medium Density Residential (City of Petaluma, 2011). Medium Density Residential within this plan is defined as single and multi-family housing at a density of 8.1 to 18.0 units per acre

Electrical Utility and Natural Gas Companies

Pacific Gas and Electric (PG&E) provides electricity to the vicinity of the Subject Property. Transformers are located along Casa Grande Road to the northwest of the Subject Property. The transformers did not appear to be leaking, and vegetation around the transformer poles appeared normal. The Subject Property is within the natural gas service area of PG&E. No other equipment was observed that could potentially contain PCBs.

3.2 INTERVIEWS AND QUESTIONNAIRES

Standard land owner and adjacent property questionnaires were distributed by MES and are included in **Appendix H**.

Owner/User Questionnaire and Owner Provided Information

In a questionnaire dated February 23, 2021 current owner Ron Malnati reported the site's previous use as agricultural land with two residences. A follow-up interview was conducted with the property owner in 2022 to confirm that there have been no changes in land use. During this interview no potential RECs were identified.

Reason for Performing Phase 1 ESA

The Phase I ESA was prepared by MES at the request of the Client. This Phase I ESA was requested to assist in the determination of whether any immediate actions at the property are necessary to comply with environmental laws and regulations.

Title Records

No title company or professional was engaged by the client to review recorded land title records and lien

records. Likewise, documentation regarding property valuation was not provided or reviewed.

Commonly Known or Reasonably Ascertainable Information, and Actual Knowledge of the User

The Owner/User Questionnaire asks if the owner is aware of "commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases of hazardous materials." Mr. Malnati did not have any further records or information in regards to releases of hazardous materials.

Environmental Liens, Activity and Use Limitations, and Valuation Reductions

The Owner/User Questionnaire completed by the owner, Ron Malnati and the EDR radius report each reported that there are no environmental liens against the Subject Property. The owner confirmed that the purchase price reasonably reflects the fair market value of the property, and that he does not have specialized knowledge regarding a reduction in value of the Subject Property due to environment issues. He also stated that there are no known activities or use limitations on the Subject Property.

Degree of Obviousness

The owner confirmed that based on his knowledge and experience related to the property, there are no obvious indicators that point to the presence or likely presence of hazardous materials products or petroleum product releases at the Subject Property.

Specialized Knowledge

Question 3 of the Owner/User Questionnaire and separate statements from the owner, Ron Malnati, confirm that the owner has specialized knowledge or experience related to the Subject Property or nearby properties for greater than 10 years.

Adjacent Property Owner and Agency Interviews

On February 22, 2021 Olivia Ervin, Environmental Planner for the City of Petaluma reported no knowledge of any RECs on the Subject Property. When asked for additional information related to the property they stated that a Phase I ESA for the adjacent property may provide a base for similar concerns on the Subject Property (**Appendix H**).

SECTION 4.0
RECORDS REVIEW

4.1 DATABASE SEARCH

Database searches were conducted for records of known storage tank sites and known sites of hazardous materials generation, storage, and/or contamination within 1.0 miles from a point roughly equivalent to the center of each of the parcels. The environmental database review was accomplished by using the services of a computerized search firm, Environmental Data Resources, Inc. (EDR). EDR uses a geographic information system to plot locations of past or current hazardous materials involvement. The EDR Report was reviewed to determine if the Subject Property and adjacent sites are listed on regulatory agency databases. Although a site may be listed within a regulatory agency database search, the listed site may not currently be contaminated or affect the environmental quality of the Subject Property and therefore be considered a REC. The regulatory agency database search is only as accurate as the data and date the data entered into the regulatory agency-maintained database was last updated. If not reported to the appropriate regulatory agency, installation of USTs or hazardous materials releases would not be listed on the regulatory agency databases searched.

The purpose of the database search is to determine if the Subject Property or adjacent sites contain RECs that would impact surface and/or subsurface conditions on the Subject Property. The EDR database report includes list of known and "unmapped" or orphan sites. The complete list of reviewed databases is provided in the EDR report, included in **Appendix E**, and positive database listings are summarized in **Table 2**.

TABLE 2
EDR SUMMARY OF AGENCY DATABASES

REGULATORY AGENCY DATABASE	MINIMUM SEARCH DISTANCE	PROPERTY LISTED	SITES LISTED
USEPA Delisted NPL	1.00 mile	No	1
USEPA CERCLIS Superfund Enterprise Management System (SEMS)	0.50 mile	No	1
USEPA Engineering Controls Sites List (US ENG CONTROLS)	0.50 mile	No	1
USEPA Institutional Controls Sites List (US INST CONTROL)	0.50 mile	No	1
EnviroStor (ENVIROSTOR)	1.00 mile	No	3
CA Leaking Underground Storage Tanks (LUST)	0.50 mile	No	2
CA SLIC	0.50 mile	No	1
CA Aboveground Storage Tank (AST)	0.25 mile	No	2
CA Historical Calsites Database (HIST Cal-Sites)	1.00 mile	No	1
CERS HAZ WASTE	0.25 mile	No	1
CA Historical Registered UST (HIST UST)	0.25 mile	No	1
CERS Tanks	0.25 mile	No	1
USEPA RCRA Non-Generators (NonGen) / No Longer Regulated (NLR)	0.25 mile	No	1
Records of Decision (ROD)	1.00 mile	No	1
CA Department of Health Services (DHS) Bond Expenditure Plan (CA BOND EXP. PLAN)	1.00 mile	No	1
CA Cortese Hazardous Waste and Substances List (Cortese)	0.50 mile	No	1

REGULATORY AGENCY DATABASE	MINIMUM SEARCH DISTANCE	PROPERTY LISTED	SITES LISTED
HIST CORTESE	0.50 mile	No	3
CA SWRCB Proposition 65 Records (Notify 65)	1.00 mile	No	3
		TOTAL	26
Note: Sites may be listed in more than one database and/or on the same database multiple times. Source: EDR, 2021 (**Appendix E)**			

4.2 RECORDED HAZARDOUS MATERIALS

Hazardous materials involvement within the Subject Property and adjacent properties identified as a result of either previously conducted Phase I ESA investigations or listings within the EDR report are discussed below.

Subject Property

The Subject Property was not listed in the databases reviewed through the EDR radius map report included in **Appendix E**. There are currently no open hazardous materials cases or registered bulk storage tanks that hold materials posing an environmental risk on the Subject Property.

Adjacent Properties

The EDR report identifies 9 sites with 26 database listings. However, a site listed on a regulatory agency database does not necessarily mean a hazardous materials release occurred at the listed site. After a review of all the database listings within the EDR report, the following were determined to require additional review to determine if the listings resulted in a potential RECs, HRECs, or CRECs:

Petaluma Septic Tank

Petaluma Septic Tank is located approximately 62 feet west/northwest and upgradient from the Subject Property and is listed on the California State Water Resources Control Board's historical listing of UST sites. The historical UST is listed as storing regular moto vehicle fuel with a capacity of 1,000 gallons. The site is not listed on any databases indicating a past release. This site does not constitute a REC.

Michael Paul Company, Inc.

The Michael Paul Company, located 572 feet north/northeast and upgradient from the Subject Property is listed on the Hazardous Waste, Tanks, and General California Environmental Reporting System (CERS) databases for generating hazardous waste and storage of chemicals and petroleum products. The site is listed as having violations related to compliance inspections conducted by the Petaluma City Fire Department for non-compliance with required staff training but there is no indication a release occurred as a result of the generation or storage of hazardous waste. The site is also listed on the RCRA NonGen/NLR database indicating the site handles hazardous waste but is not a generator under RCRA (separate from the California classification in the CERS databases). No violations have been reported under the RCRA designation. The site is listed twice on the California Environmental Protection Agency's Aboveground Petroleum Storage Tank Facilities database (AST) for 2,000 gallons of storage of unidentified materials with no violations having been reported. This site does not constitute a REC.

Babb, Gregory A. and Heathe and Petaluma Valley Hospital

Babb, Gregory A. and Heathe is located approximately 920 feet south/southeast of the Subject Property. The Petalulma Valley Hospital is located approximately 2,357 feet (0.44 miles) southwest of the Subject Property. Both sites are downgradient from the Subject Property and listed on the historical CORTESE list (HIST Cortese), a list that historically contained sites designated by the various California agencies for LUST, solid waste, and known releases. This database was abandoned and replaced with a more recent databases and is no longer updated. These listing do not appear on any other database and there is no indication of a release associated with the site. This site does not constitute a REC.

Sola Optical USA, Inc,

Sola Optical USA Inc. is an inactive superfund site located approximately 1,800 feet south and downgradient from the Subject Property. In January of 1965 a leak was reported, and between June 2003 and August 2005 several regulatory actions were carried out. As of January 2011, the site is an informational item, where investigations are ongoing but the site is not active. Due to its inactive and informational status as well as the distance from the Subject Property, this site is not considered an environmental threat to the Subject Property and does not constitute a REC.

Royal Tallow and Soap Company

The Royal Tallow and Soap Company is 0.56 miles south west and downgradient from the Subject Property. This site is listed on the LUST database. The site was originally closed in 2004 and was reopened in 2015 following a Phase 2 Investigation which found high concentrations of hydrocarbons in the soil (AEI Consultants, 2014). This site was a former soap company that utilized waste water ponds, septic tanks and leech fields, an auto maintenance area, and had USTs in conjunction with their operations building. Soil Vapor tests conducted by ERM in 2019 and 2020 have shown that unauthorized releases of hydrocarbons off of the site have been stopped and that secondary source removal has been performed to the extent practicable (ERM, 2020). Due to the distance from the Subject Property, the containment of constituents within the site, and the lack of transmissivity of constituents from the site it does not likely pose a threat to the environmental quality of the Subject Property. Therefore, this site does not constitute a REC.

Casa Grande Site (Historic Landfill)

The Casa Grande Site is located 0.89 miles southwest and downgradient from the Subject Property. The site is listed on the Envirostor Database (California Department of Toxic Substance Control's database of sites known to be contaminated or requiring additional investigations), California's Solid Waste Information System (SWF/LF), and California Environmental Reporting System. The site is listed as closed and permitted under the California Solid Waste Information system. The facility closed in 1993 and covers a total of 21 acres. During operation, the facility had a permitted maximum throughput of 16 cubic yards per day. There are no violations listed for the facility. The landfill has been capped, future uses are limited, and currently the facility is utilized as a dog park. This site does not constitute a REC.

The Stero Company

The Stero Company and Stero Dishwashing Machine is located 0.44 miles south and downgradient from the Subject Property. The company was listed on the LUST, HIST CORTESE, EMI, WDS, and CERS databases. A LUST was reported there in 1991 after a possible gasoline leak. The site was cleaned up, and the case closed in 1997. This site does not constitute a REC.

Unmapped or Orphan Sites

There was one unmapped or orphan sites listed in the EDR Radius Map Report (**Appendix E**). This site is listed on the SWF/LF database and described as the Santa Rosa Biosolids Management, located at Lakeville Highway and Highway 37. This is biosolids disposal site with no reported violations.

SECTION 5.0
FINDINGS AND CONCLUSIONS

This Phase I ESA was prepared in conformance with the scope and limitations of ASTM Standard Practice E 1527-21. Any exceptions to, or deletions from, this practice are described in **Section 1.0** of this report. Based on the site conditions during the site reconnaissance, owner interviews and questionnaires regarding existing site conditions, past environmental investigations of the property, and information in the EDR Report and other databases, no RECs have been identified on the Subject Property. Based on information gathered while conducting this Phase I ESA, the following environmental conditions were observed:

- No improperly stored hazardous materials were observed on the Subject Property.
- There were no RECs identified within the Subject Property.
- The surrounding properties listed in the EDR report do not constitute RECs and are unlikely to pose a threat to the environmental integrity of the Subject Property due to type of listing or closure status.
- The fruit trees and garden on the Subject Property are for household, not commercial, use only.

The residence to be removed as part of the project fronts on Casa Grande Road and was constructed in the early 1950s, and therefore there is a potential for lead-based paint and asbestos-containing insulation within the home. Excavation and removal of the septic tank system has the potential to damage the tank or uncover defects in the tank which allow contamination to escape. Therefore, the following actions are recommended:

- Retain a qualified consultant to examine the residence and determine whether lead-based paint or asbestos-containing materials are present. If they are, implement appropriate demolition, containment, and disposal measures prior to and during residential demolition.
- When the septic tank is removed, inspect it for leaks. Should any be identified, remove contaminated soils, dispose of them appropriately, and complete soil testing to ensure that all contaminated soil has been disposed of.

SECTION 6.0

REPORT PREPARERS

The undersigned declare to the best of their professional opinion that they meet the definition of Environmental Professional (EP) as defined in §312.10 of 40 CFR 312. Charlane Gross prepared this report under the professional supervision of Trenton Wilson, who qualifies as an EP as defined in the ASTM Standard E1527-21, and has the specific qualifications based on education, training, and experience to assess a property of the nature, and setting of the Subject Property. Resumes for the EPs are included in **Appendix I**.

REPORT PREPARATION

Montrose Environmental Solutions
1801 7th Street, Suite 100
Sacramento, CA 95811

Site Assessor: _____ **Date:** 06/22/2022
Charlane Gross

Report Preparer: _____ **Date:** 06/22/2022
Charlane Gross

Senior Reviewer: _____ **Date:** 06/22/2022
Trenton Wilson

SECTION 7.0
REFERENCES

AEI Consultants, 2014. Phase II Subsurface Investigation. Property Identification: 2592 Lakeville Highway, Petaluma, California. Available online at: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0609700905&doc_id=5870113. Accessed February 2021

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APPENDIX A

HISTORICAL AERIAL PHOTOGRAPHS

Creekwood

280 Casa Grande Road

Petaluma, CA 94954

Inquiry Number: 6763176.8

November 23, 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

11/23/21

Site Name:

Creekwood
280 Casa Grande Road
Petaluma, CA 94954
EDR Inquiry # 6763176.8

Client Name:

ANALYTICAL ENVIRONMENTAL SERV
1801 7th Street
Sacramento, CA 95811
Contact: Kevin Gereghty

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
1993	1"=500'	Acquisition Date: July 10, 1993	USGS/DOQQ
1982	1"=500'	Flight Date: July 08, 1982	USDA
1973	1"=500'	Flight Date: October 03, 1973	USGS
1970	1"=500'	Flight Date: May 14, 1970	USGS
1968	1"=500'	Flight Date: April 16, 1968	USGS
1952	1"=500'	Flight Date: June 13, 1952	USGS
1942	1"=500'	Flight Date: June 04, 1942	USDA

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

INQUIRY #: 6763176.8

YEAR: 2016

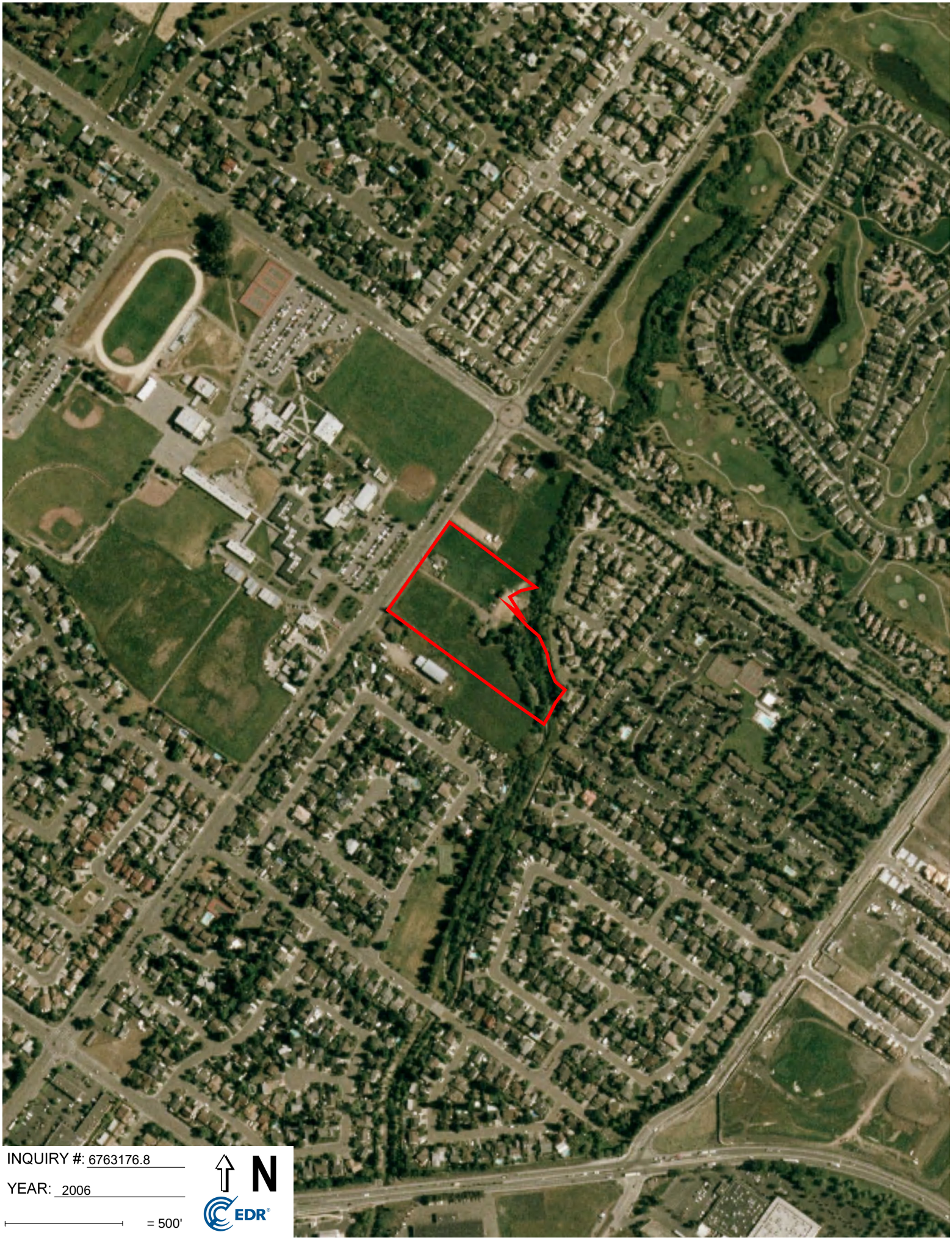
= 500'

N

EDR


INQUIRY #: 6763176.8
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 6763176.8
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 6763176.8
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 6763176.8
YEAR: 1993
= 500'
N
EDR


INQUIRY #: 6763176.8
YEAR: 1982
= 500'
N
EDR

APPENDIX B

HISTORICAL TOPOGRAPHIC MAPS

Creekwood

280 Casa Grande Road

Petaluma, CA 94954

Inquiry Number: 6763176.4

November 23, 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

11/23/21

Site Name:

Creekwood
280 Casa Grande Road
Petaluma, CA 94954
EDR Inquiry # 6763176.4

Client Name:

ANALYTICAL ENVIRONMENTAL SERVI
1801 7th Street
Sacramento, CA 95811
Contact: Kevin Gereghty

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by ANALYTICAL ENVIRONMENTAL SERVICES 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:

P.O.# 220517
Project: Creekwood

Coordinates:

Latitude:	38.241214 38° 14' 28" North
Longitude:	-122.596477 -122° 35' 47" West
UTM Zone:	Zone 10 North
UTM X Meters:	535311.95
UTM Y Meters:	4232655.73
Elevation:	45.99' above sea level

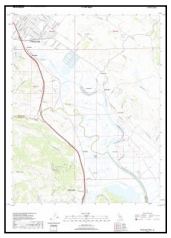
Maps Provided:

2018	1914, 1916
2015	
2012	
1980	
1973	
1968	
1954	
1942, 1944	

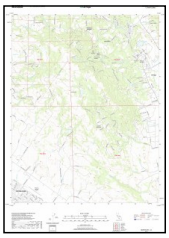
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2018 Source Sheets

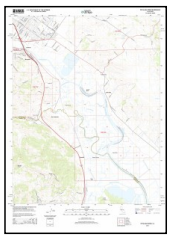


Petaluma River
2018
7.5-minute, 24000

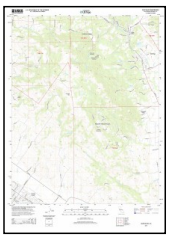


Glen Ellen
2018
7.5-minute, 24000

2015 Source Sheets



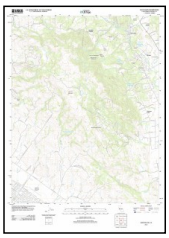
Petaluma River
2015
7.5-minute, 24000



Glen Ellen
2015
7.5-minute, 24000

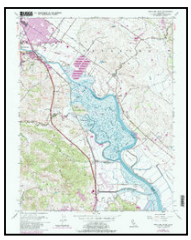
2012 Source Sheets

Petaluma River
2012
7.5-minute, 24000



Glen Ellen
2012
7.5-minute, 24000

1980 Source Sheets



Petaluma River
1980
7.5-minute, 24000
Aerial Photo Revised 1978

Glen Ellen
1980
7.5-minute, 24000
Aerial Photo Revised 1978

Topo Sheet Key

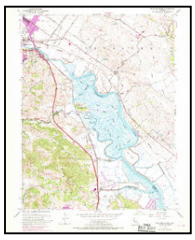
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1973 Source Sheets

Glen Ellen
1973
7.5-minute, 24000
Aerial Photo Revised 1952

Petaluma River
1973
7.5-minute, 24000
Aerial Photo Revised 1973

1968 Source Sheets



Petaluma River
1968
7.5-minute, 24000
Aerial Photo Revised 1968

Glen Ellen
1968
7.5-minute, 24000
Aerial Photo Revised 1968

1954 Source Sheets

Petaluma River
1954
7.5-minute, 24000
Aerial Photo Revised 1952

Petaluma Creek
1954
7.5-minute, 24000
Aerial Photo Revised 1952

Glen Ellen
1954
7.5-minute, 24000
Aerial Photo Revised 1952

1942, 1944 Source Sheets

Petaluma
1942
15-minute, 62500
Aerial Photo Revised 1937

Santa Rosa
1944
15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

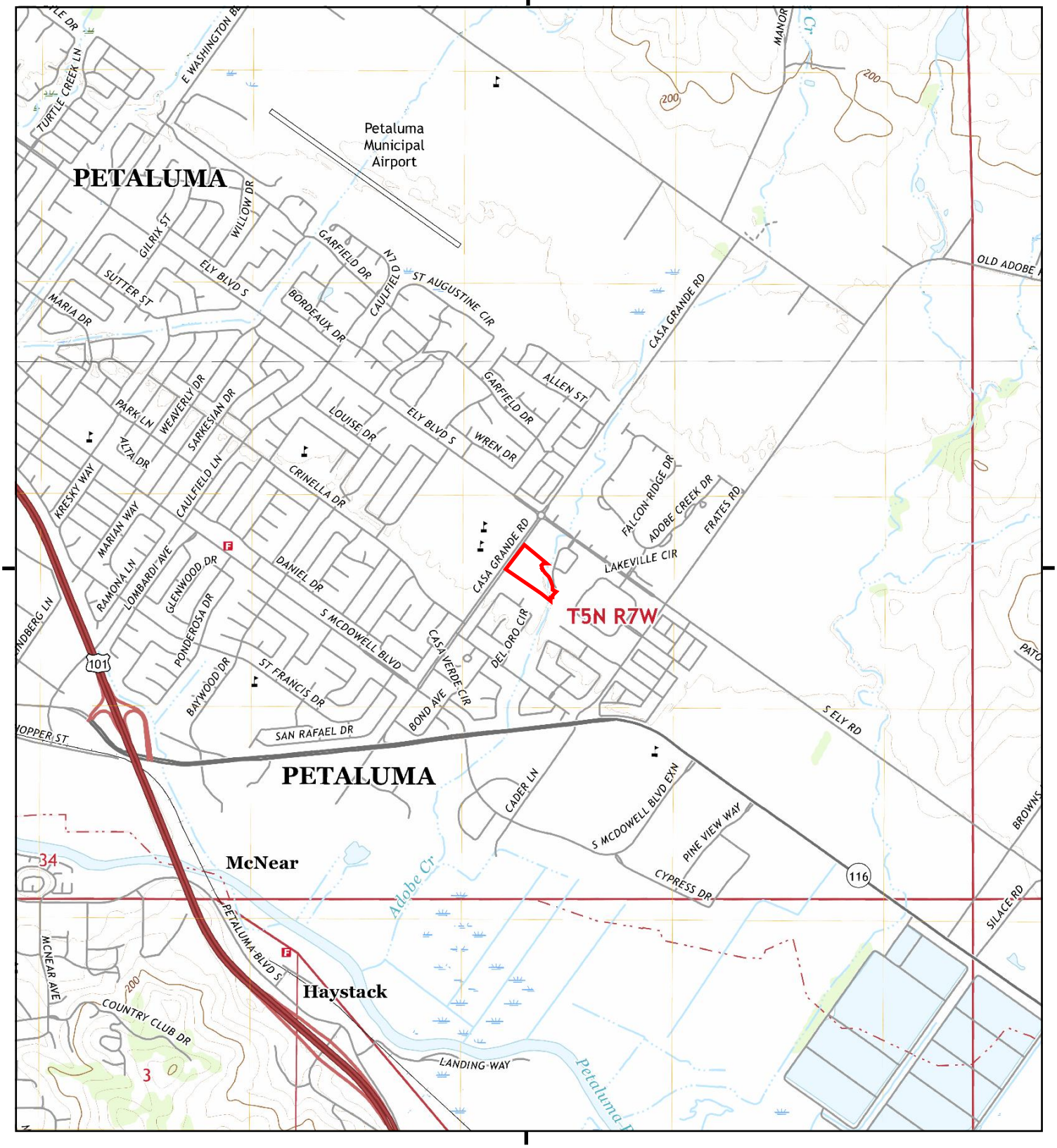
1914, 1916 Source Sheets

Petaluma
1914
15-minute, 62500

Santa Rosa
1916
15-minute, 62500

Historical Topo Map

2018



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

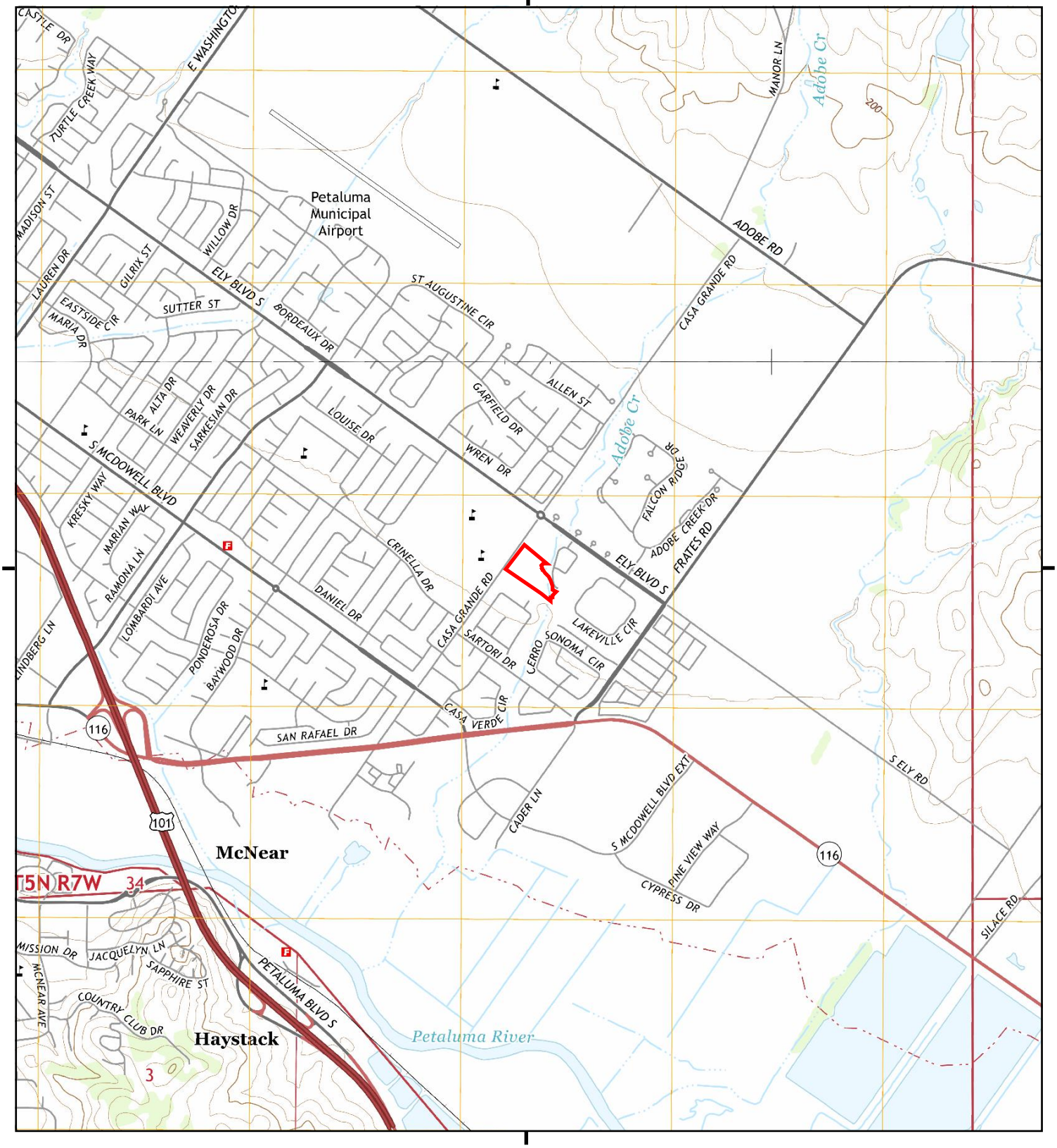
TP, Petaluma River, 2018, 7.5-minute
N, Glen Ellen, 2018, 7.5-minute

SITE NAME: Creekwood
ADDRESS: 280 Casa Grande Road
Petaluma, CA 94954
CLIENT: ANALYTICAL ENVIRONMENTAL SERVI

N

Historical Topo Map

2015



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W E
SW S SE

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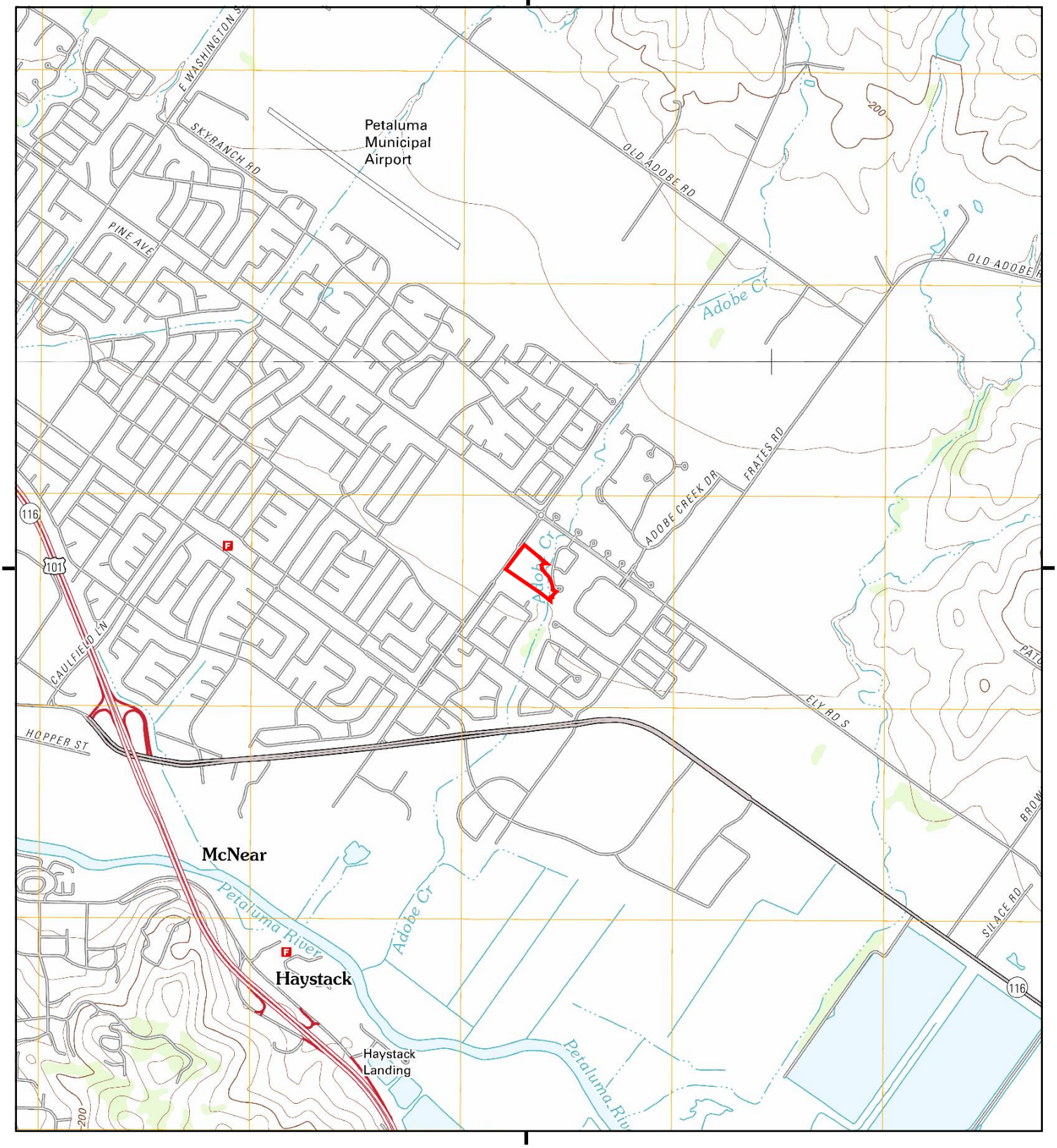
N, Glen Ellen, 2015, 7.5-minute

SITE NAME: Creekwood
ADDRESS: 280 Casa Grande Road
Petaluma, CA 94954
CLIENT: ANALYTICAL ENVIRONMENTAL SERVI

N

Historical Topo Map

2012



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W E
SW S SE

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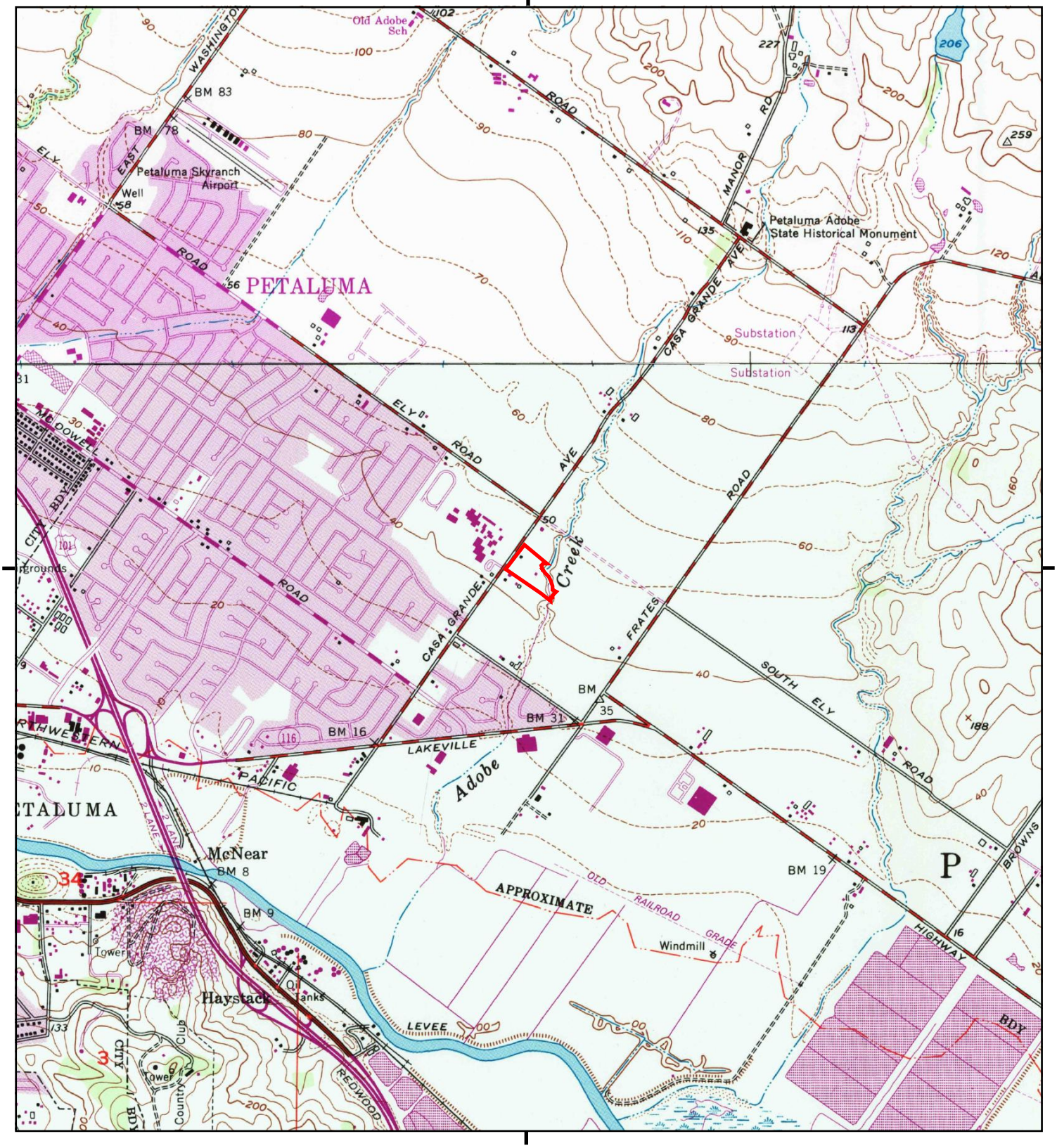
N, Glen Ellen, 2012, 7.5-minute

SITE NAME: Creekwood
ADDRESS: 280 Casa Grande Road
Petaluma, CA 94954
CLIENT: ANALYTICAL ENVIRONMENTAL SERVI

N

Historical Topo Map

1980



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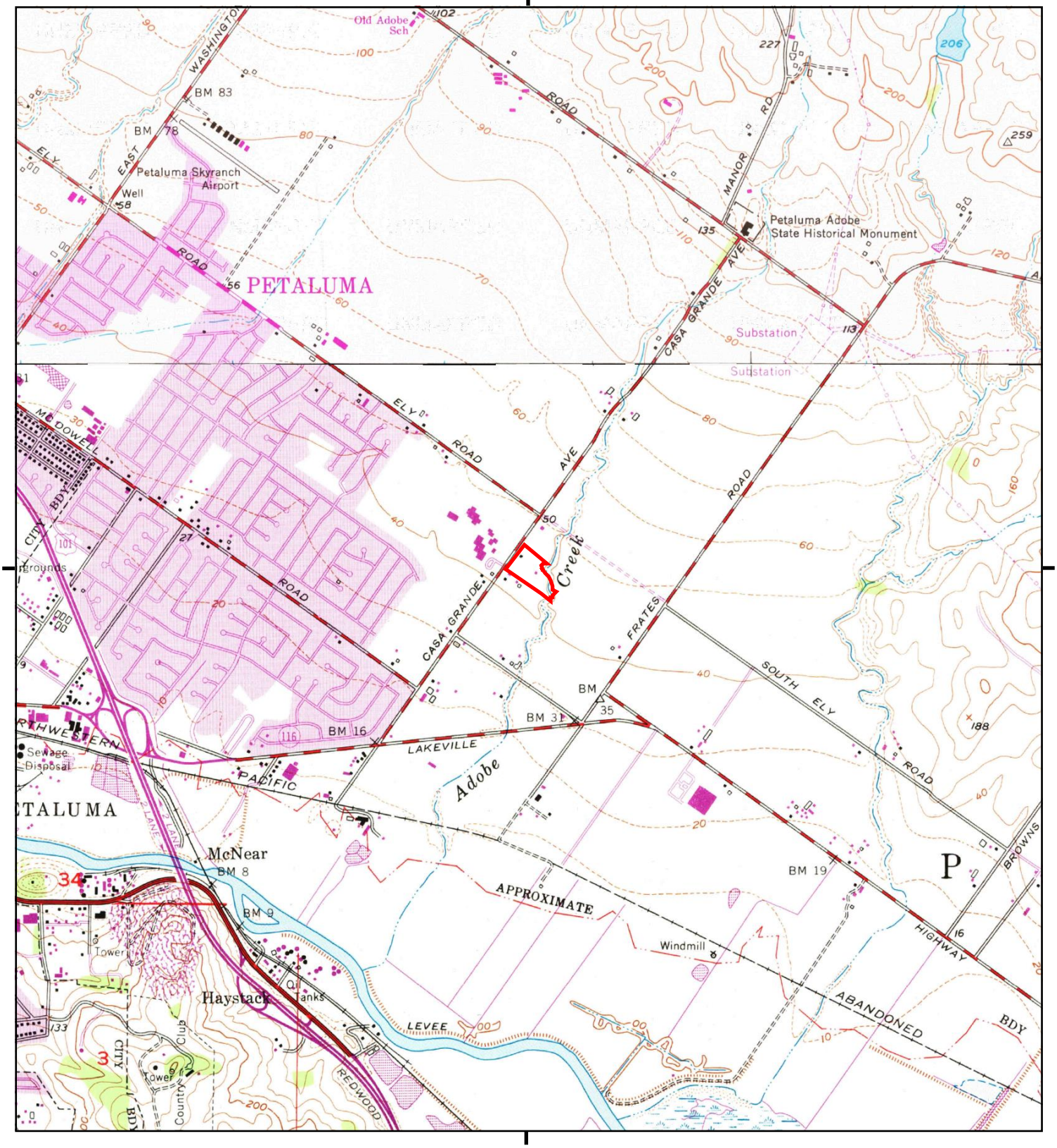
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Petaluma River, 1980, 7.5-minute
N, Glen Ellen, 1980, 7.5-minute

SITE NAME: Creekwood
ADDRESS: 280 Casa Grande Road
Petaluma, CA 94954
CLIENT: ANALYTICAL ENVIRONMENTAL SERVI

N



This report includes information from the following map sheet(s).

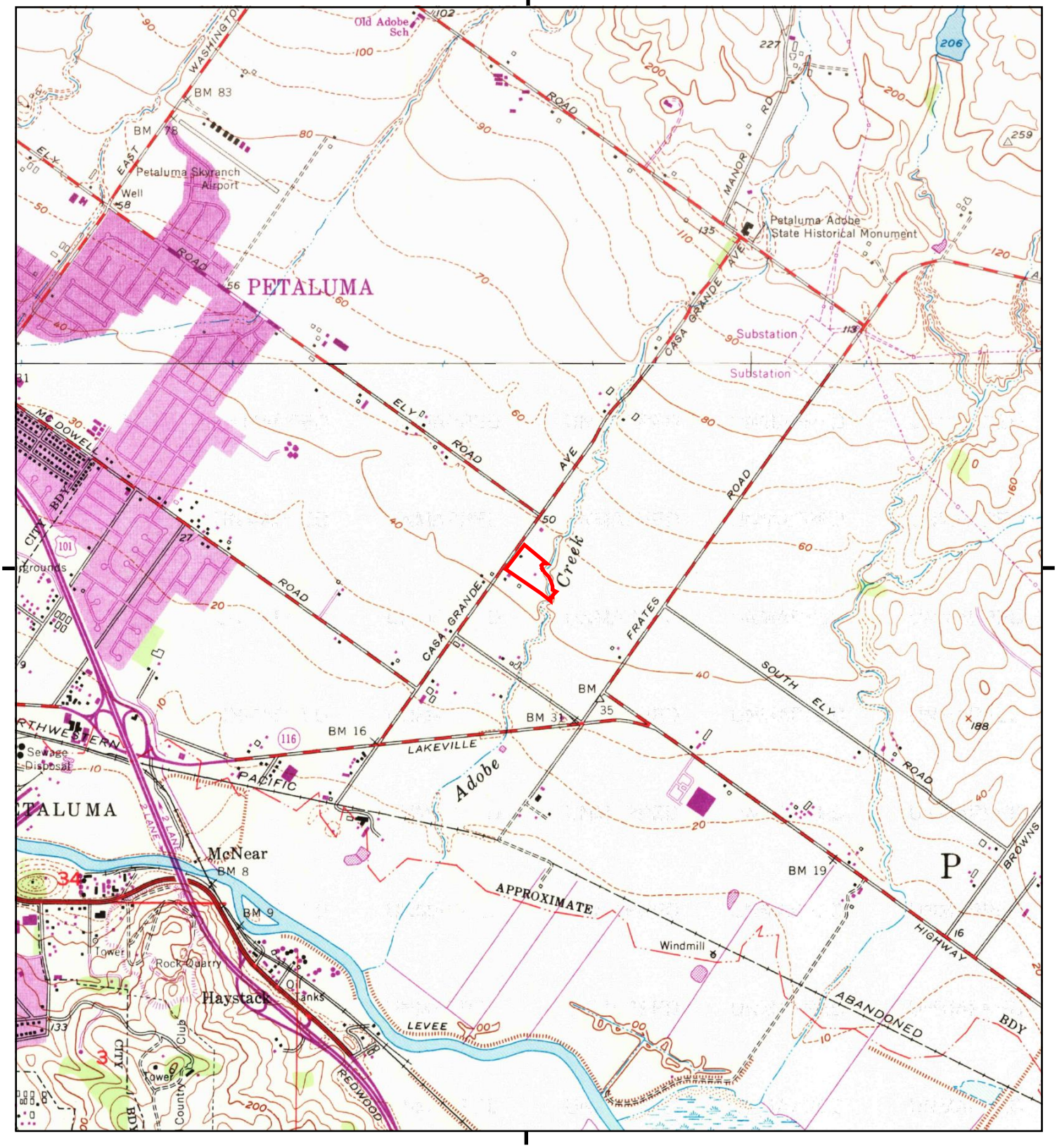
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Petaluma River, 1973, 7.5-minute
N, Glen Ellen, 1973, 7.5-minute

SITE NAME: Creekwood
ADDRESS: 280 Casa Grande Road
Petaluma, CA 94954
CLIENT: ANALYTICAL ENVIRONMENTAL SERVI

N



This report includes information from the following map sheet(s).

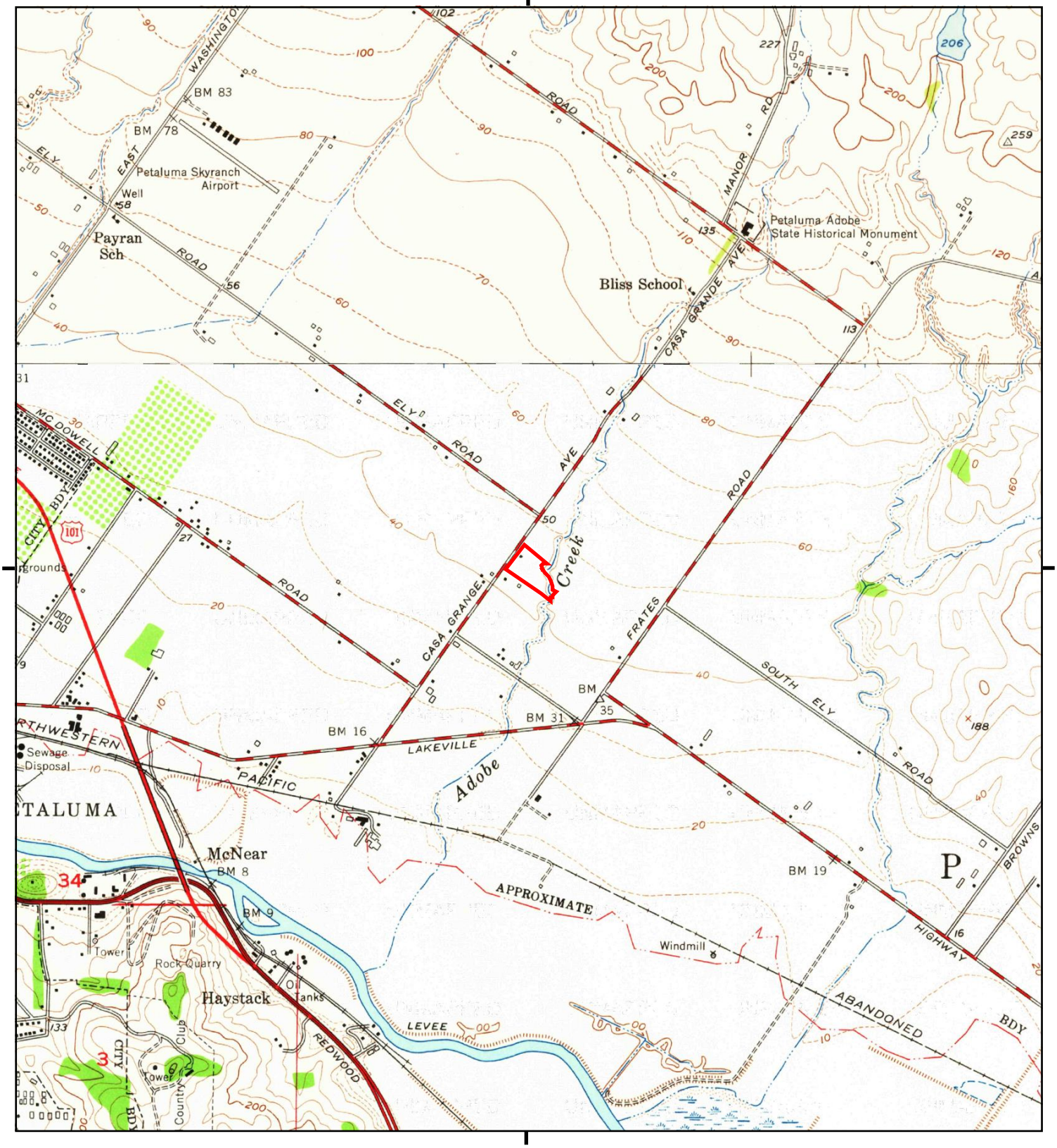
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Petaluma River, 1968, 7.5-minute
N, Glen Ellen, 1968, 7.5-minute

SITE NAME: Creekwood
ADDRESS: 280 Casa Grande Road
Petaluma, CA 94954
CLIENT: ANALYTICAL ENVIRONMENTAL SERVI

N



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

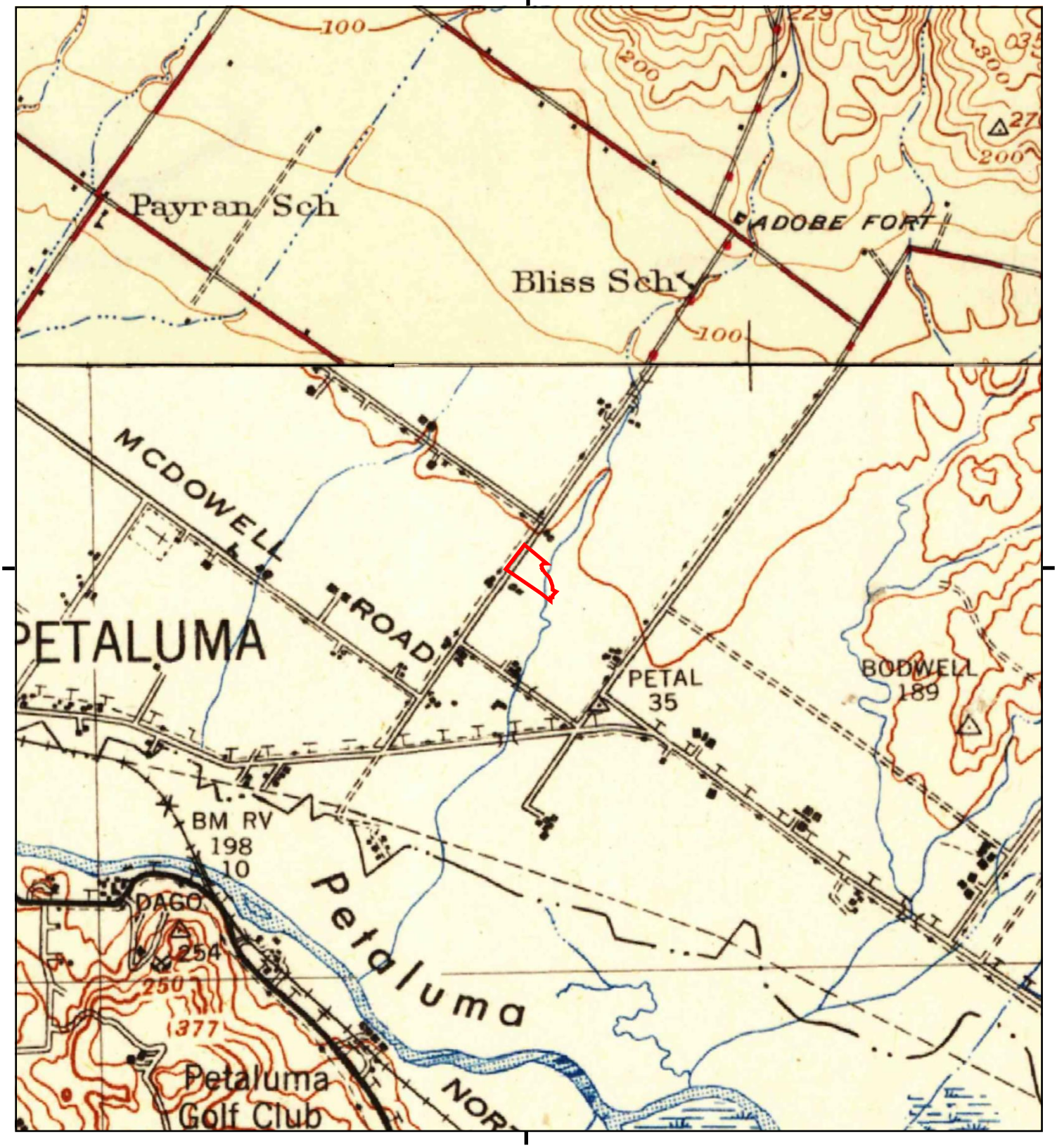
TP, Petaluma River, 1954, 7.5-minute
TP, Petaluma Creek, 1954, 7.5-minute
N, Glen Ellen, 1954, 7.5-minute

SITE NAME: Creekwood
ADDRESS: 280 Casa Grande Road
Petaluma, CA 94954
CLIENT: ANALYTICAL ENVIRONMENTAL SERVI

N

Historical Topo Map

1942, 1944



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

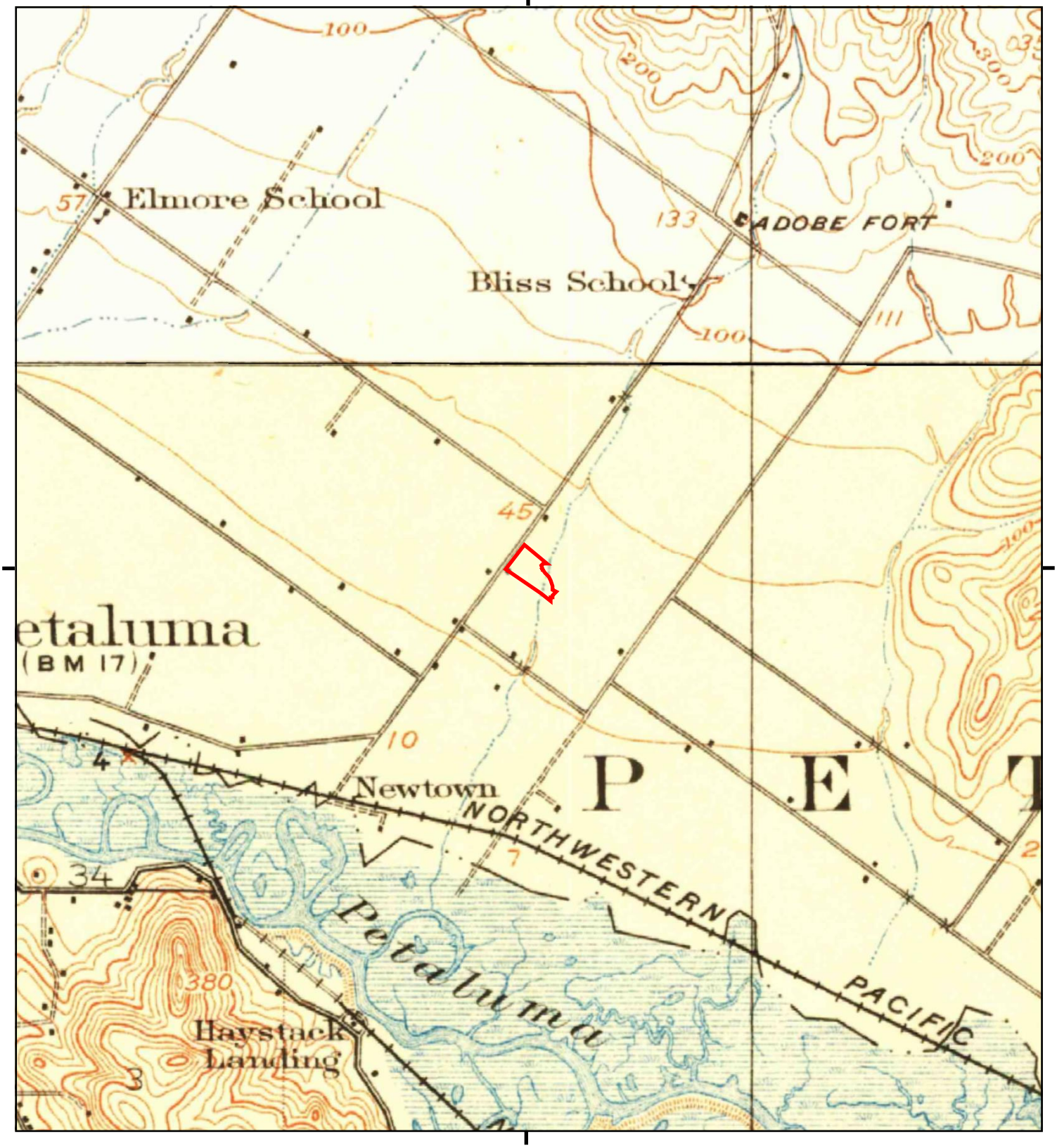
TP, Petaluma, 1942, 15-minute
N, Santa Rosa, 1944, 15-minute

SITE NAME: Creekwood
ADDRESS: 280 Casa Grande Road
Petaluma, CA 94954
CLIENT: ANALYTICAL ENVIRONMENTAL SERVI

N

Historical Topo Map

1914, 1916



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, Petaluma, 1914, 15-minute
N, Santa Rosa, 1916, 15-minute

SITE NAME: Creekwood
ADDRESS: 280 Casa Grande Road
Petaluma, CA 94954
CLIENT: ANALYTICAL ENVIRONMENTAL SERVI

N

APPENDIX C

SANBORN NO COVERAGE DOCUMENT

Creekwood

280 Casa Grande Road

Petaluma, CA 94954

Inquiry Number: 6763176.3

November 23, 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

11/23/21

Site Name:

Creekwood
280 Casa Grande Road
Petaluma, CA 94954
EDR Inquiry # 6763176.3

Client Name:

ANALYTICAL ENVIRONMENTAL SERVI(
1801 7th Street
Sacramento, CA 95811
Contact: Kevin Gereghty

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by ANALYTICAL ENVIRONMENTAL SERVICES 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.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # DFC7-4BE9-AFED

PO # 220517

Project Creekwood

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 #: DFC7-4BE9-AFED

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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APPENDIX D

CITY DIRECTORY IMAGE REPORT

Creekwood
280 Casa Grande Rd
Petaluma, CA 94954

Inquiry Number: 6763176.5
November 30, 2021

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

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

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®

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
1986	☑	☐	Haines Criss-Cross Directory
1981	☑	☐	POLK DIRECTORY CO
1976	☑	☐	POLK DIRECTORY CO
1971	☑	☐	POLK DIRECTORY CO
1967	☑	☐	POLK DIRECTORY CO
1963	☑	☐	POLK DIRECTORY CO
1954	☑	☐	POLK DIRECTORY CO

EXECUTIVE SUMMARY

Year	***Target Street***	***Cross Street***	***Source***

FINDINGS

TARGET PROPERTY STREET

280 Casa Grande Rd
Petaluma, CA 94954

Year	*CD Image*	*Source*	
CASA GRANDE RD			
2017	pg A2	EDR Digital Archive	
2014	pg A4	EDR Digital Archive	
2010	pg A6	EDR Digital Archive	
2005	pg A7	EDR Digital Archive	
2000	pg A8	EDR Digital Archive	
1995	pg A9	EDR Digital Archive	
1992	pg A10	EDR Digital Archive	
1986	pg A11	Haines Criss-Cross Directory	
1981	pg A12	POLK DIRECTORY CO	
1976	pg A13	POLK DIRECTORY CO	
1971	pg A14	POLK DIRECTORY CO	
1971	pg A15	POLK DIRECTORY CO	
1967	pg 0	POLK DIRECTORY CO	Street not listed in Source
1963	pg 0	POLK DIRECTORY CO	Street not listed in Source
1954	pg 0	POLK DIRECTORY CO	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

CASA GRANDE RD 2017

1	SKOFF TRUCKING
5	DRY ROT SPECIALISTS
	WEDGE ROOFING
	WEDGE ROOFING INC
25	LAKEVILLE MINISTORAGE
29	PETALUMA SELF STORAGE
250	CARSTENSEN, NEAL M
270	MALNATI, CHARLES A
299	PETALUMA SCHOOL DISTRICT
333	PETALUMA HEALTH CENTER
	PETALUMA SCHOOL DISTRICT
400	AUCLAIR, LEONARD A
	BERRIE, JACQUELINE L
	BLACK, ELAINE M
	BOUCHARD, JULIA A
	BREED, MONA D
	BROCKBANK, THOMAS W
	BURNS, JAMES D
	CASA GRANDE SENIOR APARTMENTS
	CHRISTOPHERSON, CORINNE E
	COREAS, ELBA A
	DIAMOND, MARGARET V
	DOREY, MERYL J
	DUKE, LINDA C
	ESPINOSA, JOAN C
	FAREZ, GINETTE L
	FOUNTAIN, JOAN L
	GAHM, WOLFGANG B
	GILLEY, KINSLEY R
	GUAGLIANO, RAYMOND
	HAYES, MORGAN J
	JONES, MARIE C
	KAMPF, GERTRUDE L
	KESTREL, TAMARA
	LAMMI, KENNETH A
	LAURENCE, EDMUND H
	LAWSON, BARBARA M
	LITCHFIELD, MIYOKO
	LIZ, HEY
	LOPEZ, DEMAGNA C
	MAMMINI, ALICE E
	MANION, TONI S
	MCFARLAND, CAROLINE C
	MONSERRAT, LEONIDA L
	MURRAY, RUTH V
	NEILSEN, MARALYN D
	RADFORD, TIENG T
	RAISBECK, SEAN L
	REED, SUZANNE M
	ROSE, JOYCE E

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

CASA GRANDE RD 2017 (Cont'd)

400	RYAN, MELINDA
	SOUSA, FRANK
	STEINHART, PHIL W
	TAMBORSKI, PATSY J
	VELEZ, CARLOS
	WALSH, BILL
	WEST, DERALYN J
	ZAKOUT, JAMEEL E
500	GILARDI, DONALD R
637	VYENIELO, LEROY W
735	SALDANA, ANASTACIO G
845	STATE OF CALIFORNIA

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

CASA GRANDE RD 2014

1	SKOFF TRUCKING
5	AIRTIGHT INSULATION GROUP
	DRY ROT SPECIALISTS
	WEDGE ROOFING
	WEDGE ROOFING INC
25	LAKEVILLE MINISTORAGE
29	PETALUMA SELF STORAGE
	PURPLE SUN CANDLE COMPANY INC
	WHITE MAGICK ALCHEMY
250	CARSTENSEN, NEAL
270	MALNATI, CHARLES A
280	ALLENA, ANNIE I
299	SONOMA MOUNTAIN HIGH SCHOOL
333	CASA GRANDE HIGH SCHOOL
400	ANDERSON, GWEN F
	BERRIE, JACQUELINE L
	BOUCHARD, JULIA A
	BREED, RAMONA
	BROCKBANK, THOMAS W
	CARBONE, THERESA
	CASA GRANDE SENIOR APARTMENTS
	CHOATE, BEN T
	COREAS, ELBA A
	CRABILL, CALVIN D
	DIAMOND, MARGARET V
	DOREY, DIANE J
	DUKE, LINDA C
	ESPINOSA, JOAN C
	FAREZ, GINETTE L
	FOLEY, JON P
	FOUNTAIN, JOAN L
	GAHM, WOLFGANG B
	GILLEY, KINSLEY R
	GUAGLIANO, RAYMOND
	HAYES, MORGAN J
	JOHNSON, DOROTHY N
	JONES, MARIE C
	KESTREL, TAMARA
	LAMMI, KENNETH A
	LAURENCE, EDMUND H
	LAWSON, BARBARA M
	LITCHFIELD, MIYOKO
	MAMMINI, ALICE E
	MANION, TONI S
	MONSERRAT, LEONIDA L
	MURRAY, RUTH V
	NEILSEN, MARALYN D
	PHIL, STEINHART
	RAISBECK, SEAN L
	REED, SUZANNE M

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

CASA GRANDE RD 2014 (Cont'd)

400	ROMERO, ELAINE
	SKIVER, VICTORIA L
	STEINHART, PHIL W
	TAMARA, KESTREL
	TAMBORSKI, PATSY J
	WALSH, BILL
	WERNER, ELAYNE C
	WEST, DERALYN J
	ZAKOUT, JAMEEL E
500	OCCUPANT UNKNOWN,
637	VYENIELO, LEE
735	GARCIA, HERMINIA
	OCCUPANT UNKNOWN,
845	STATE OF CALIFORNIA

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

CASA GRANDE RD 2010

5	FLAME STOP OF NORTHERN CA
	WEDGE ROOFING INC
25	LAKEVILLE MINISTORAGE
29	EXCEL SCAFFOLD SVC
	FUNKSWAY HOME STAGING
	GREEN FROG OUTDOOR FURNITURE
	PETALUMA SELF STORAGE
250	CARSTENSEN, JR C
270	MALNATI, CHARLES A
280	ALLENA, ANNIE I
299	SONOMA MOUNTAIN HIGH SCHOOL
333	CASA GRANDE HIGH SCHOOL
	PETALUMA SCHOOL DIST FISH
400	AUCLAIR, LEONARD A
	BARRAGAN, HARROLD
	BEREY, EDWARD J
	CASA GRANDE SENIOR APARTMENTS
	CHOATE, BEN T
	DEFRANCE, MICHAEL S
	DIAMOND, MARGARET
	DRAPER, TOM H
	DUKE, LINDA C
	ESPINOSA, JOAN C
	FOLEY, JON P
	FOUNTAIN, JOAN L
	GARROLD, PATRICIA
	HEAD, PATRICIA A
	JARROLD, PATRICIA
	LINK, SHELDON M
	MAMMINI, ALICE E
	MCFARLAND, CAROLINE C
	MOORE, B J
	POWELL, ALLEN C
	RADFORD, TIENG T
	RAISBECK, JOHN L
	REED, SUZANNE M
	RENNER, MARIA C
	ROSE, RODRIGUEZ
	ROSICHAN, LEE A
	RUMSOWER, HARLEY O
	WERNER, MAUREEN L
	WHETSTONE, LESTER E
	ZAKOUT, JAMEEL
500	OCCUPANT UNKNOWN,
637	VYENIELO, LEE
735	GARCIA, HERMINIA
	LEON, HILDA C
845	PARKS & RECREATION DEPT

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

CASA GRANDE RD 2005

1	SKOFF TRUCKING
29	BODY GEAR FOR PETS
	PETALUMA SELF STORAGE
	PURPLE CANDLE CO
	PURPLE SUN CANDLE FACTORY OUTLET & S
	SILVERADO CONSTRUCTION CO
235	CASA GRANDE CENTER
	CASA, GRANDE C
250	CARSTENSEN, NEAL
	CUSTOM TRACTOR SERVICE
270	MALNATI, CHARLES A
280	ALLENA, PETER J
299	SONOMA MT HIGH SCHOOL
333	ADOBE GRAPPLING
	CASA GRANDE HIGH SCHOOL
	PETALUMA COMMUNITY ACCESS
	PETALUMA SCHOOL
	UNITED ANGLERS OF CASA GRANDE
500	GILARDI, DONALD R
637	VYENIELO, LEE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

CASA GRANDE RD 2000

1	SKOFF TRUCKING
	TONYS CUSTOM TRUCK PAINTING
	WATER TRUCK SERVICE
5	FLAME STOP OF NORTHERN CALIFORNIA
	WEDGE ROOFING INCORPORATED
25	LAKEVILLE MINI STORAGE
	PETALUMA SELF STORAGE
235	CASA GRANDE CENTER
	O A D S
	OLD ADOBE DEVELOPMENTAL SERVICES
250	CARSTENSEN, NEAL
270	MALNATI, CHARLES
280	ALLENA, PETER J
299	PETALUMA SCHOOL DISTRICT SCHOOLS
333	CASA GRANDE HIGH SCHOOL
	PETALUMA COMMUNITY ACCESS
	PETALUMA PEOPLE SERVICES
	PETALUMA PPL SERVICES PPSC YOUTH EMPLOYMENT SERVICES
	PETALUMA SCHOOL DISTRICT SCHOOLS
500	GILARDI, DON
585	OCCUPANT UNKNOWN,
735	GARCIA, ROSS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

CASA GRANDE RD 1995

1	DONALDSON, DON
	SKOFF TRUCKING
	TONYS CUSTOM TRUCK PAINTING
	WATER TRUCK SVC
5	FLAME STOP NORTHERN CALIFORNIA
	WEDGE ROOFING INC
25	LAKEVILLE MINI STORAGE
192	SMITH, JAMES
235	CASA GRANDE CTR
250	CARSTENSEN, NEAL
270	MALNATI, CHARLES
280	ALLENA, PETER J
333	CASA GRANDE HIGH SCHOOL
	EAST HIGH SCHOOL
500	GILARDI, DON
585	MILLER, LESTER
637	OCCUPANT UNKNOWNN
735	GARCIA, ROSS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

CASA GRANDE RD 1992

1	DONALDSON, DON
	SKOFF TRUCKING
	TONYS CSTM PAINTING
	WATER TRUCK SERVICE
5	FLAME STOP OF NO CA
	WEDGE ROOFING INC
25	LAKEVILLE MINI STRG
192	SMITH, JAMES
235	CASA GRANDE CENTER
	SOUTH COUNTY SERVS
250	CARSTENSEN, NEAL
270	MALNATI, CHARLES
280	ALLENA, PETER J
333	PETLMA SC HI ADMIN
	SONMA CO SC ATO TCH
500	GILARDI, DON
585	MILLER, LESTER
735	GARCIA, ROSS

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

CASA GRANDE RD 1986

CASA GRANDE RD 94952
PETALUMA

1	SKOFF TRUCKING	762-6543	
5	EMMISSION PARTS SPL	762-6688	+6
	NORTH COAST ROOFING	762-8060	4
7	XXXX	00	
25	LAKEVILLE MINI STRG	775-6796	+6
90	XXXX	00	
120	SARTORI E	762-7442	
192	SMITH JAMES	763-5672	4
193	XXXX	00	
235	CASA GRANDE CENTER	763-9807	9
	OLD ADOBE DVLP SRVS	763-9807	+6
250	CARSTENSEN J	763-0154	
	CARSTENSEN K	762-2059	
	CARSTENSEN NEAL	763-0154	
270	MALNATI CHAS	762-7984	
260	ALLENA PETER J	763-0656	
333	CASA GRANDE HIGH	778-4677	4
	PETLMA SC CASA GRND	775-4690	4
	PETLMA SC CASA GRND	775-4677	4
	PETLMA SC CASA GRND	776-4667	+6
	PETLMA SC CASA GRND	776-4708	4
	SONMA CO SC OFC	763-7996	3
	SONOMA OD SC CMPTR	763-7996	
500	GILARDI DON	763-0613	
585	MILLER LESTER	762-7266	
598	XXXX	00	
637	XXXX	00	
735	GARCIA ROSS	763-2633	4
	MONTOYA TONY B	762-8559	
	PETLMA SEPTIC SERV	763-1387	+6

Target Street	Cross Street	Source
✓	-	POLK DIRECTORY CO

CASA GRANDE RD 1981

12

CASA GRANDE RD —FROM 1 BLK SOUTHWEST OF LAKEVILLE HWY NORTHEAST

ZIP CODE 94952
1 Skoff Trucking 762-8543
10 Peck Roofing (Stge)
LAKEVILLE HWY INTERSECTS
BOND AV BEGINS
90 Prairie Market No 218 763-0754
S MC DOWELL BLVD INTERSECTS
120 Sartori Eda M Mrs ◎ 762-7442
1420 Manjunath Prasad ◎ 763-6454
1424 Vacant

25

S MC DOWELL BLVD INTERSECTS
192 White Paul Jr 763-2993
193 Filippini Anna Mrs ◎ 762-6958
OLD LAKEVILLE RD INTERSECTS
1424 No Return

19

CRINELLA DR ENDS
235 Casa Grande Center 763-9807
250 Carstensen Leroy C ◎ 763-0154
270 Malnati Charles A ◎ 762-7984
280 Allena Pete J ◎ 763-0856
333 Casa Grande High School 762-3594
500 Gilardi Donald R ◎ 763-0813
S ELY BLVD ENDS

Target Street	Cross Street	Source
✓	-	POLK DIRECTORY CO

CASA GRANDE RD 1976

12

CASA GRANDE RD —FROM LAKEVILLE HWY NORTHEAST

ZIP CODE 94952

1 Skoff Trucking 762-8543

25

S MC DOWELL BLVD INTERSECTS

120 Sartori Ralph H ◎ 762-7442

192 Esposito Ramona H

193 Filippini Henry A ◎ 762-6958

CRINELLA DR INTERSECTS

OLD LAKEVILLE RD INTERSECTS

19

235 Petaluma Training Center 763-7662

250 Carstensen Leroy C ◎ 763-0154

270 Malnati Charles A ◎ 762-7984

280 Allena Pete J ◎ 763-0856

333 Casa Grande High School 762-3594

500 Gilardi Donald R ◎ 763-0813

S ELY BLVD INTERSECTS

585 Miller Lester F ◎ 762-7266

598★Owen Clark

637 Vyenielo Leroy W 763-0730

735 Rose Of Sharon Church 762-8559

Garcia Ross ◎ 763-1397

Montoya Tony ◎ 762-8559

Target Street	Cross Street	Source
✓	-	POLK DIRECTORY CO

CASA GRANDE RD 1971

12

CASA GRANDE RD —FROM LAKEVILLE HWY NORTHEAST

ZIP CODE 94952

1 Mobile Precasters Inc 763-1235

19

S MC DOWELL BLVD INTERSECTS

120 Sartori Ralph H ◎ 762-7442

192 Esposito Ramona H

193 Filippini Henry A ◎ 762-6958

235 Hartman Wm ◎ 762-7209

Target Street	Cross Street	Source
✓	-	POLK DIRECTORY CO

CASA GRANDE RD 1971

CASA GRANDE RD—Contd

250 Carstensen Leroy C ◎
763-0154
270 Malnati Charles A ◎
762-7984
280 Allena Pete J ◎ 763-0856
500 Gilardi Donald R ◎ 763-0813
S ELY BLVD INTERSECTS
585 Miller Lester F ◎ 762-7266
598 Hunter Roland C
637 Vyenielo Lee R 763-0730
735 House Of Refuge Mission
762-8559
Garcia Ross ◎ 763-1397
Montoya Tony ◎ 762-8559

APPENDIX E

EDR REPORT RESULTS

Creekwood
280 Casa Grande Road
Petaluma, CA 94954

Inquiry Number: 6763176.2s
November 24, 2021

The EDR Radius Map™ Report with GeoCheck®

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

TABLE OF CONTENTS

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

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 (E1527-21), 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

280 CASA GRANDE ROAD
PETALUMA, CA 94954

COORDINATES

Latitude (North):	38.2412140 - 38ˆ 14' 28.37''
Longitude (West):	122.5964770 - 122ˆ 35' 47.31''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	535312.8
UTM Y (Meters):	4232449.5
Elevation:	46 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	12008171 PETALUMA RIVER, CA
Version Date:	2018
North Map:	12008125 GLEN ELLEN, CA
Version Date:	2018

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140608
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
280 CASA GRANDE ROAD
PETALUMA, CA 94954

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	PETALUMA SEPTIC TANK	735 CASA GRANDE RD	HIST UST	Higher	62, 0.012, WNW
A2	MICHAEL PAUL COMPANY	1200 CASA GRANDE RD	RCRA NonGen / NLR	Higher	572, 0.108, NNE
A3		1200 CASA GRANDE RD	AST	Higher	572, 0.108, NNE
A4	MICHAEL PAUL COMPANY	1200 CASA GRANDE RD	AST	Higher	572, 0.108, NNE
A5	MICHAEL PAUL COMPANY	1200 CASA GRANDE RD	CERS HAZ WASTE, CERS TANKS, CERS	Higher	572, 0.108, NNE
6	BABB, GREGORY A. & H	1548 CERRO SONOMA CI	HIST CORTESE	Lower	825, 0.156, SSE
B7	NISSON RANCH	3597 LAKEVILLE HWY	Notify 65	Lower	1910, 0.362, SSE
B8	NISSON RANCH	3597 LAKEVILLE HWY	Notify 65	Lower	1910, 0.362, SSE
B9	NISSON RANCH	3597 LAKEVILLE HWY	Notify 65	Lower	1910, 0.362, SSE
B10	SOLA OPTICAL USA INC	3600 LAKEVILLE HWY	ENVIROSTOR, CPS-SLIC, HIST Cal-Sites, HIST UST,...	Lower	2003, 0.379, SSE
B11	SOLA OPTICAL USA, IN	3600 LAKEVILLE HWY	Delisted NPL, SEMS, RCRA-SQG, US ENG CONTROLS, US...	Lower	2118, 0.401, SSE
B12	SOLA OPTICAL USA, IN	1500 CADER LANE	CHMIRS, CA BOND EXP. PLAN, EMI	Lower	2118, 0.401, SSE
C13	STERO DISHWASHING MA	3200 LAKEVILLE	LUST, HIST CORTESE, CERS	Lower	2297, 0.435, South
C14	THE STERO COMPANY	3200 LAKEVILLE HWY	LUST, Cortese, EMI, WDS, CERS	Lower	2297, 0.435, South
15	PETALUMA VALLEY HOSP	1360 MCDOWELL	HIST CORTESE	Lower	2357, 0.446, SW
16	ROYAL TALLOW & SOAP	2592 LAKEVILLE HWY	ENVIROSTOR, SWF/LF, LUST, HIST UST, Cortese, HIST...	Lower	3176, 0.602, SW
17	CASA GRANDE LANDFILL	WEST END OF CASA GRA	ENVIROSTOR, SWF/LF, Financial Assurance, CERS	Lower	4697, 0.890, SW

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

Lists of Federal NPL (Superfund) sites

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

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---------- Federal Facility Site Information listing

Lists of Federal CERCLA sites with NFRAP

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

Lists of Federal RCRA facilities undergoing Corrective Action

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

Lists of Federal RCRA TSD facilities

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

Lists of Federal RCRA generators

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

Federal ERNS list

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

Lists of state- and tribal (Superfund) equivalent sites

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

EXECUTIVE SUMMARY

Lists of state and tribal landfills and solid waste disposal facilities

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

Lists of state and tribal leaking storage tanks

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

Lists of state and tribal registered storage tanks

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

Lists of state and tribal voluntary cleanup sites

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

Lists of state and tribal brownfield 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
SCH ---------- School Property Evaluation Program
CDL ---------- Clandestine Drug Labs
Toxic Pits ---------- Toxic Pits Cleanup Act Sites
US CDL ---------- National Clandestine Laboratory Register
PFAS ---------- PFAS Contamination Site Location Listing
AQUEOUS FOAM ---------- Former Fire Training Facility Assessments Listing

Local Lists of Registered Storage Tanks

SWEEPS UST ---------- SWEEPS UST Listing
CA FID UST ---------- Facility Inventory Database

EXECUTIVE SUMMARY

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
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
UXO	Unexploded Ordnance Sites
ECHO	Enforcement & Compliance History Information
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities

EXECUTIVE SUMMARY

EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
ICE	ICE
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
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.

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.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal Delisted NPL sites

Delisted NPL: 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 deleted from the NPL where no further response is appropriate.

A review of the Delisted NPL list, as provided by EDR, and dated 07/29/2021 has revealed that there is 1 Delisted NPL site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOLA OPTICAL USA, IN	***3600 LAKEVILLE HWY***	***SSE 1/4 - 1/2 (0.401 mi.)***	***B11***	***31***
EPA ID:: CAD981171523				
Site ID:: 902280				

Lists of Federal sites subject to CERCLA removals and CERCLA orders

SEMS: 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.

A review of the SEMS list, as provided by EDR, and dated 07/29/2021 has revealed that there is 1 SEMS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOLA OPTICAL USA, IN	***3600 LAKEVILLE HWY***	***SSE 1/4 - 1/2 (0.401 mi.)***	***B11***	***31***
Site ID: 0902280				
EPA Id: CAD981171523				

Federal institutional controls / engineering controls registries

US ENG CONTROLS: A listing of sites with engineering controls in place.

A review of the US ENG CONTROLS list, as provided by EDR, and dated 08/23/2021 has revealed that there is 1 US ENG CONTROLS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOLA OPTICAL USA, IN	***3600 LAKEVILLE HWY***	***SSE 1/4 - 1/2 (0.401 mi.)***	***B11***	***31***
EPA ID:: CAD981171523				
EPA ID:: CAD981171523				

US INST CONTROLS: A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

A review of the US INST CONTROLS list, as provided by EDR, and dated 08/23/2021 has revealed that there is 1 US INST CONTROLS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOLA OPTICAL USA, IN	***3600 LAKEVILLE HWY***	***SSE 1/4 - 1/2 (0.401 mi.)***	***B11***	***31***
EPA ID:: CAD981171523				

Lists of state- and tribal hazardous waste facilities

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 07/22/2021 has revealed that there are 3 ENVIROSTOR sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOLA OPTICAL USA INC	***3600 LAKEVILLE HWY***	***SSE 1/4 - 1/2 (0.379 mi.)***	***B10***	***19***
Facility Id: 49300001				
Status: Refer: RWQCB				
ROYAL TALLOW & SOAP	***2592 LAKEVILLE HWY***	***SW 1/2 - 1 (0.602 mi.)***	***16***	***108***
Facility Id: 49280006				
Status: Refer: RWQCB				
CASA GRANDE LANDFILL	***WEST END OF CASA GRA***	***SW 1/2 - 1 (0.890 mi.)***	***17***	***121***
Facility Id: 49490012				
Status: Refer: RWQCB				

Lists of state and tribal leaking storage tanks

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
STERO DISHWASHING MA	***3200 LAKEVILLE***	***S 1/4 - 1/2 (0.435 mi.)***	***C13***	***98***
Database: SONOMA CO. LUST, Date of Government Version: 06/30/2021				
Database: LUST, Date of Government Version: 06/03/2021				

Status: Completed - Case Closed
Global ID: T0609700949
Global Id: T0609700949

THE STERO COMPANY ***3200 LAKEVILLE HWY*** ***S 1/4 - 1/2 (0.435 mi.)*** ***C14*** ***100***
Database: LUST REG 2, Date of Government Version: 09/30/2004
date9: 4/15/1997
Facility Id: 49-0187
Facility Status: Case Closed

CPS-SLIC: 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.

A review of the CPS-SLIC list, as provided by EDR, has revealed that there is 1 CPS-SLIC site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOLA OPTICAL USA INC	***3600 LAKEVILLE HWY***	***SSE 1/4 - 1/2 (0.379 mi.)***	***B10***	***19***
Database: SLIC REG 2, Date of Government Version: 09/30/2004 Facility Id: 49S0001				

Lists of state and tribal registered storage tanks

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, has revealed that there are 2 AST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	1200 CASA GRANDE RD	NNE 0 - 1/8 (0.108 mi.)	A3	12
Database: AST, Date of Government Version: 07/06/2016				
MICHAEL PAUL COMPANY	1200 CASA GRANDE RD	NNE 0 - 1/8 (0.108 mi.)	A4	12
Database: AST, Date of Government Version: 07/06/2016				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

HIST Cal-Sites: Formerly known as ASPIS, this database contains both known and potential hazardous substance sites. The source is the California Department of Toxic Substance Control. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

A review of the HIST Cal-Sites list, as provided by EDR, and dated 08/08/2005 has revealed that there is 1 HIST Cal-Sites site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOLA OPTICAL USA INC	*3600 LAKEVILLE HWY*	*SSE 1/4 - 1/2 (0.379 mi.)*	*B10*	*19*

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

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 07/15/2021 has revealed that there is 1 CERS HAZ WASTE site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MICHAEL PAUL COMPANY	*1200 CASA GRANDE RD*	*NNE 0 - 1/8 (0.108 mi.)*	*A5*	*13*

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

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

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PETALUMA SEPTIC TANK Facility Id: 00000053842	735 CASA GRANDE RD	WNW 0 - 1/8 (0.012 mi.)	1	9

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.

A review of the CERS TANKS list, as provided by EDR, and dated 07/15/2021 has revealed that there is 1 CERS TANKS site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MICHAEL PAUL COMPANY	*1200 CASA GRANDE RD*	*NNE 0 - 1/8 (0.108 mi.)*	*A5*	*13*

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 09/13/2021 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MICHAEL PAUL COMPANY	1200 CASA GRANDE RD	NNE 0 - 1/8 (0.108 mi.)	A2	9

EPA ID:: CAL000252745

ROD: Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid the cleanup.

A review of the ROD list, as provided by EDR, and dated 07/29/2021 has revealed that there is 1 ROD site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOLA OPTICAL USA, IN	***3600 LAKEVILLE HWY***	***SSE 1/4 - 1/2 (0.401 mi.)***	***B11***	***31***
EPA ID:: CAD981171523				

CA BOND EXP. 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.

A review of the CA BOND EXP. PLAN list, as provided by EDR, and dated 01/01/1989 has revealed that there is 1 CA BOND EXP. PLAN site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOLA OPTICAL USA, IN	***1500 CADER LANE***	***SSE 1/4 - 1/2 (0.401 mi.)***	***B12***	***93***

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 06/17/2021 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
THE STERO COMPANY	***3200 LAKEVILLE HWY***	***S 1/4 - 1/2 (0.435 mi.)***	***C14***	***100***
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 are 3 HIST CORTESE sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BABB, GREGORY A. & H	1548 CERRO SONOMA CI	SSE 1/8 - 1/4 (0.156 mi.)	6	17
Reg Id: 6A189105N01				
STERO DISHWASHING MA	***3200 LAKEVILLE***	***S 1/4 - 1/2 (0.435 mi.)***	***C13***	***98***
Reg Id: 49-0187				
PETALUMA VALLEY HOSP	1360 MCDOWELL	SW 1/4 - 1/2 (0.446 mi.)	15	108
Reg Id: 49-0109				

EXECUTIVE SUMMARY

Notify 65: 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.

A review of the Notify 65 list, as provided by EDR, and dated 03/12/2021 has revealed that there are 3 Notify 65 sites within approximately 1 mile of the target property.

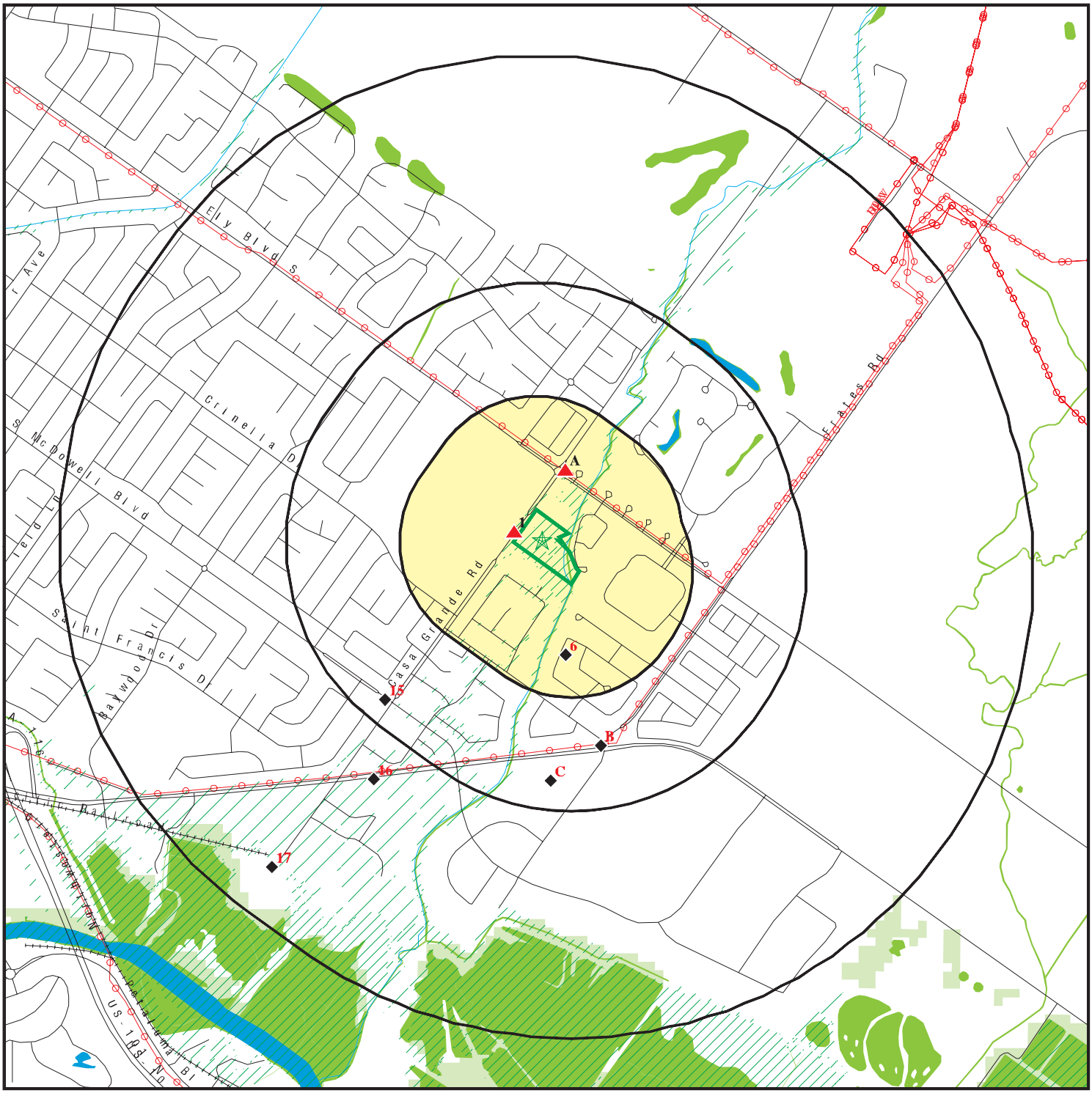
Lower Elevation	Address	Direction / Distance	Map ID	Page
NISSON RANCH	3597 LAKEVILLE HWY	SSE 1/4 - 1/2 (0.362 mi.)	B7	18
NISSON RANCH	3597 LAKEVILLE HWY	SSE 1/4 - 1/2 (0.362 mi.)	B8	18
NISSON RANCH	3597 LAKEVILLE HWY	SSE 1/4 - 1/2 (0.362 mi.)	B9	18

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
SANTA ROSA BIOSOLIDS MGMT. - SOUTH	SWF/LF

OVERVIEW MAP - 6763176.2S



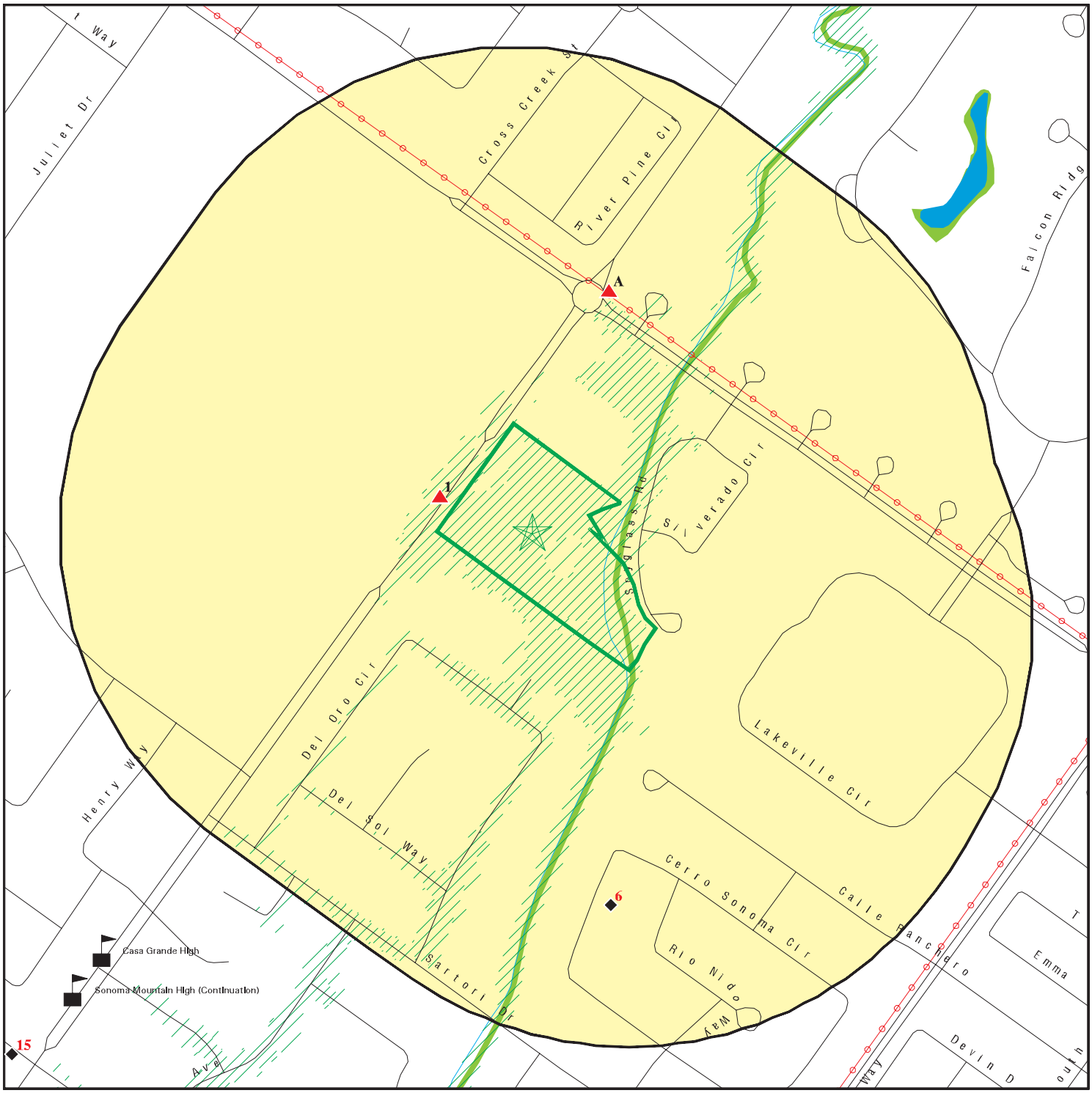
0 1/4 1/2 1 Miles

- 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: Creekwood ADDRESS: 280 Casa Grande Road Petaluma CA 94954 LAT/LONG: 38.241214 / 122.596477	CLIENT: ANALYTICAL ENVIRONMENTAL SERVICES CONTACT: Kevin Gereghty INQUIRY #: 6763176.2s DATE: November 24, 2021 2:00 pm

DETAIL MAP - 6763176.2S



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
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:	Creekwood	CLIENT:	ANALYTICAL ENVIRONMENTAL SERVICES
ADDRESS:	280 Casa Grande Road Petaluma CA 94954	CONTACT:	Kevin Gereghty
LAT/LONG:	38.241214 / 122.596477	INQUIRY #:	6763176.2s
		DATE:	November 24, 2021 2:03 pm

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								
Lists of Federal NPL (Superfund) sites								
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
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	1	0	NR	1
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	1	NR	NR	1
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
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	1	NR	NR	1
US INST CONTROLS	0.500		0	0	1	NR	NR	1
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
Lists of state- and tribal (Superfund) equivalent sites								
RESPONSE	1.000		0	0	0	0	NR	0
Lists of state- and tribal hazardous waste facilities								
ENVIROSTOR	1.000		0	0	1	2	NR	3
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	0	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
Lists of state and tribal leaking storage tanks								
LUST	0.500		0	0	2	NR	NR	2
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	1	NR	NR	1
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		2	0	NR	NR	NR	2
INDIAN UST	0.250		0	0	NR	NR	NR	0
Lists of 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
Lists of state and tribal brownfield 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	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	1	0	NR	1
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		1	0	NR	NR	NR	1
US CDL	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
AQUEOUS FOAM	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		1	0	NR	NR	NR	1
CERS TANKS	0.250		1	0	NR	NR	NR	1

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
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		1	0	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	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	1	0	NR	1
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	1	0	NR	1
Cortese	0.500		0	0	1	NR	NR	1
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	1	2	NR	NR	3
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	3	0	NR	3
UIC	TP		NR	NR	NR	NR	NR	0
UIC GEO	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	TP		NR	NR	NR	NR	NR	0
PROJECT	TP		NR	NR	NR	NR	NR	0
WDR	TP		NR	NR	NR	NR	NR	0
CIWQS	TP		NR	NR	NR	NR	NR	0
CERS	TP		NR	NR	NR	NR	NR	0
NON-CASE INFO	TP		NR	NR	NR	NR	NR	0
OTHER OIL GAS	TP		NR	NR	NR	NR	NR	0
PROD WATER PONDS	TP		NR	NR	NR	NR	NR	0
SAMPLING POINT	TP		NR	NR	NR	NR	NR	0
WELL STIM PROJ	TP		NR	NR	NR	NR	NR	0
MINES MRDS	TP		NR	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	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	6	1	17	2	0	26

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

1
WNW
< 1/8
0.012 mi.
62 ft.

PETALUMA SEPTIC TANK
735 CASA GRANDE RD
PETALUMA, CA 94952

HIST UST **U001600582**
N/A

Relative:
Higher

Actual:
46 ft.

HIST UST:

Name:	PETALUMA SEPTIC TANK
Address:	735 CASA GRANDE RD
City,State,Zip:	PETALUMA, CA 94952
File Number:	0002169A
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002169A.pdf
Region:	STATE
Facility ID:	00000053842
Facility Type:	Other
Other Type:	COMMERCIAL USE
Contact Name:	ROSS GARCIA
Telephone:	7077631397
Owner Name:	ROSS GARCIA
Owner Address:	735 CASA GRANDE RD.
Owner City,St,Zip:	PETALUMA, CA 94952
Total Tanks:	0001
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

Click here for Geo Tracker PDF:

A2
NNE
< 1/8
0.108 mi.
572 ft.

MICHAEL PAUL COMPANY INC
1200 CASA GRANDE RD
PETALUMA, CA 94954

Site 1 of 4 in cluster A

RCRA NonGen / NLR **1024803423**
CAL000252745

Relative:
Higher

Actual:
54 ft.

RCRA NonGen / NLR:

Date Form Received by Agency:	20200117
Handler Name:	MICHAEL PAUL COMPANY INC
Handler Address:	1200 CASA GRANDE RD
Handler City,State,Zip:	PETALUMA, CA 94954
EPA ID:	CAL000252745
Contact Name:	RYAN MAHER
Contact Address:	1200 CASA GRANDE RD
Contact City,State,Zip:	PETALUMA, CA 94954
Contact Telephone:	707-769-1006
Contact Fax:	707-769-0650
Contact Email:	KELLYHANSEN.MPC@GMAIL.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported

MICHAEL PAUL COMPANY INC (Continued) **1024803423**

State District Owner:	Not reported
State District:	Not reported
Mailing Address:	1200 CASA GRANDE RD
Mailing City,State,Zip:	PETALUMA, CA 94954-0000
Owner Name:	MICHAEL PAUL COMPANY INC
Owner Type:	Other
Operator Name:	MICHAEL PAUL COMPANY INC
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:	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:	Not reported
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:	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:	20200130
Recognized Trader-Importer:	No

MICHAEL PAUL COMPANY INC (Continued) **1024803423**

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:	Operator
Owner/Operator Name:	MICHAEL PAUL COMPANY INC
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1200 CASA GRANDE RD
Owner/Operator City,State,Zip:	PETALUMA, CA 94954-0000
Owner/Operator Telephone:	707-769-1006
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	MICHAEL PAUL COMPANY INC
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1200 CASA GRANDE RD
Owner/Operator City,State,Zip:	PETALUMA, CA 94954-0000
Owner/Operator Telephone:	707-769-1006
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20200117
Handler Name:	MICHAEL PAUL COMPANY INC
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:	No
Electronic Manifest Broker:	No

List of NAICS Codes and Descriptions:

NAICS Code:	238910
NAICS Description:	SITE PREPARATION CONTRACTORS

Facility Has Received Notices of Violations:

Violations:	No Violations Found

MICHAEL PAUL COMPANY INC (Continued) **1024803423**

Evaluation Action Summary:
Evaluations: No Evaluations Found

A3 **AST** **A100215683**
NNE **1200 CASA GRANDE RD** **N/A**
< 1/8 **PETALUMA, CA**
0.108 mi.
572 ft. **Site 2 of 4 in cluster A**

Relative: AST:
Higher

Actual:
54 ft.

Name:	Not reported
Address:	1200 CASA GRANDE RD
City/Zip:	PETALUMA,
Certified Unified Program Agencies:	Petaluma
Owner:	Michael Paul Company
Total Gallons:	2,000
CERSID:	Not reported
Facility ID:	Not reported
Business Name:	Not reported
Phone:	Not reported
Fax:	Not reported
Mailing Address:	Not reported
Mailing Address City:	Not reported
Mailing Address State:	Not reported
Mailing Address Zip Code:	Not reported
Operator Name:	Not reported
Operator Phone:	Not reported
Owner Phone:	Not reported
Owner Mail Address:	Not reported
Owner State:	Not reported
Owner Zip Code:	Not reported
Owner Country:	Not reported
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	Not reported

A4 **MICHAEL PAUL COMPANY, INC.** **AST** **A100422365**
NNE **1200 CASA GRANDE RD** **N/A**
< 1/8 **PETALUMA, CA 94954**
0.108 mi.
572 ft. **Site 3 of 4 in cluster A**

Relative: AST:
Higher

Actual:
54 ft.

Name:	MICHAEL PAUL COMPANY, INC.
Address:	1200 CASA GRANDE RD
City/Zip:	PETALUMA,94954
Certified Unified Program Agencies:	Not reported
Owner:	Michael Paul
Total Gallons:	Not reported
CERSID:	10120825

MICHAEL PAUL COMPANY, INC. (Continued) **A100422365**

Facility ID:	Not reported
Business Name:	Michael Paul Company, Inc.
Phone:	707-769-1006
Fax:	707-769-0650
Mailing Address:	1200 Casa Grande Rd
Mailing Address City:	Petaluma
Mailing Address State:	CA
Mailing Address Zip Code:	94954
Operator Name:	Michael Paul
Operator Phone:	707-769-1006
Owner Phone:	707-769-1006
Owner Mail Address:	70 Legend Rd
Owner State:	CA
Owner Zip Code:	94960
Owner Country:	United States
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	CA1000252745

A5 **MICHAEL PAUL COMPANY, INC.** **CERS HAZ WASTE** **S121743327**
NNE **1200 CASA GRANDE RD** **CERS TANKS** **N/A**
< 1/8 **PETALUMA, CA 94954** **CERS**
0.108 mi.
572 ft. **Site 4 of 4 in cluster A**

Relative:
Higher

Actual:
54 ft.

CERS HAZ WASTE:

Name:	MICHAEL PAUL COMPANY, INC.
Address:	1200 CASA GRANDE RD
City,State,Zip:	PETALUMA, CA 94954
Site ID:	134869
CERS ID:	10120825
CERS Description:	Hazardous Waste Generator

CERS TANKS:

Name:	MICHAEL PAUL COMPANY, INC.
Address:	1200 CASA GRANDE RD
City,State,Zip:	PETALUMA, CA 94954
Site ID:	134869
CERS ID:	10120825
CERS Description:	Aboveground Petroleum Storage

CERS:

Name:	MICHAEL PAUL COMPANY, INC.
Address:	1200 CASA GRANDE RD
City,State,Zip:	PETALUMA, CA 94954
Site ID:	134869
CERS ID:	10120825
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	134869
Site Name:	Michael Paul Company, Inc.

MICHAEL PAUL COMPANY, INC. (Continued) **S121743327**

Violation Date: 03-21-2017
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Training - General
Violation Notes: Returned to compliance on 04/03/2017.
Violation Division: Petaluma City Fire Department
Violation Program: APSA
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-18-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Petaluma City Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-18-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Petaluma City Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 02-14-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: No violations.
Eval Division: Petaluma City Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 02-14-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: No violations.
Eval Division: Petaluma City Fire Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-18-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Petaluma City Fire Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-21-2017

MICHAEL PAUL COMPANY, INC. (Continued) **S121743327**

Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Petaluma City Fire Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-21-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Petaluma City Fire Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-21-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Petaluma City Fire Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-10-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: No violations
Eval Division: Petaluma City Fire Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-18-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Petaluma City Fire Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-18-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Petaluma City Fire Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-18-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported

MICHAEL PAUL COMPANY, INC. (Continued) **S121743327**

Eval Division: Petaluma City Fire Department
Eval Program: HW
Eval Source: CERS

Coordinates:
Site ID: 134869
Facility Name: Michael Paul Company, Inc.
Env Int Type Code: HWG
Program ID: 10120825
Coord Name: Not reported
Ref Point Type Desc: Unknown
Latitude: 38.229168
Longitude: -122.610580

Affiliation:
Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 1200 Casa Grande Rd
Affiliation City: Petaluma
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94954
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer
Entity Name: Melissa Spoon
Entity Title: Bookkeeper
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Operator
Entity Name: Michael Paul
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: (707) 769-1006

Affiliation Type Desc: CUPA District
Entity Name: Petaluma City Fire Department
Entity Title: Not reported
Affiliation Address: 11 English Street
Affiliation City: Petaluma
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94952
Affiliation Phone: (707) 778-4389

Affiliation Type Desc: Legal Owner

MICHAEL PAUL COMPANY, INC. (Continued) **S121743327**

Entity Name:	Michael Paul
Entity Title:	Not reported
Affiliation Address:	70 Legend Rd
Affiliation City:	San Anselmo
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94960
Affiliation Phone:	(707) 769-1006
Affiliation Type Desc:	Parent Corporation
Entity Name:	Michael Paul Company, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Environmental Contact
Entity Name:	Ryan Maher
Entity Title:	Not reported
Affiliation Address:	1200 Casa Grande Rd
Affiliation City:	Petaluma
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94954
Affiliation Phone:	Not reported
Affiliation Type Desc:	Document Preparer
Entity Name:	Melissa Spoon
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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6 **BABB, GREGORY A. & HEATHE** **HIST CORTESE** **S105025547**
SSE **1548 CERRO SONOMA CIRCLO** **N/A**
1/8-1/4 **PETALUMA, CA 94954**
0.156 mi.
825 ft.

Relative: **Lower**

Actual: **38 ft.**

HIST CORTESE:

edr_fname:	BABB, GREGORY A. & HEATHE
edr_fadd1:	1548 CERRO SONOMA CIRCLO
City,State,Zip:	PETALUMA, CA 94954
Region:	CORTESE
Facility County Code:	18
Reg By:	WBC&D
Reg Id:	6A189105N01

B7 **NISSON RANCH** **Notify 65** **S100453840**
SSE **3597 LAKEVILLE HWY** **N/A**
1/4-1/2 **PETALUMA, CA 94954**
0.362 mi.
1910 ft. **Site 1 of 6 in cluster B**

Relative: NOTIFY 65:
Lower
Actual: Name: NISSON RANCH
34 ft. Address: 3597 LAKEVILLE HWY
City,State,Zip: PETALUMA, CA 94954-5654
Date Reported: 19921026
Staff Initials: Not reported
Board File Number: 0LG921242
Facility Type: Leak Rpt
Discharge Date: Not reported
Issue Date: Not reported
Incident Description: Not reported
Global ID: Not reported
Status: Not reported

B8 **NISSON RANCH** **Notify 65** **S100453877**
SSE **3597 LAKEVILLE HWY** **N/A**
1/4-1/2 **PETALUMA, CA 94954**
0.362 mi.
1910 ft. **Site 2 of 6 in cluster B**

Relative: NOTIFY 65:
Lower
Actual: Name: NISSON RANCH
34 ft. Address: 3597 LAKEVILLE HWY
City,State,Zip: PETALUMA, CA 94954-5654
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Issue Date: Not reported
Incident Description: Not reported
Global ID: Not reported
Status: Not reported

B9 **NISSON RANCH** **Notify 65** **S100353566**
SSE **3597 LAKEVILLE HWY** **N/A**
1/4-1/2 **PETALUMA, CA 94954**
0.362 mi.
1910 ft. **Site 3 of 6 in cluster B**

Relative: NOTIFY 65:
Lower
Actual: Name: NISSON RANCH
34 ft. Address: 3597 LAKEVILLE HWY
City,State,Zip: PETALUMA, CA 94954-5654
Date Reported: 19921026
Staff Initials: Not reported
Board File Number: 0LG921242
Facility Type: Leak Rpt
Discharge Date: Not reported
Issue Date: Not reported
Incident Description: Not reported
Global ID: Not reported

NISSON RANCH (Continued) **S100353566**

Status: Not reported

B10 **SOLA OPTICAL USA INC** **ENVIROSTOR** **S100848244**
SSE **3600 LAKEVILLE HWY** **CPS-SLIC** **N/A**
1/4-1/2 **PETALUMA, CA 94954** **HIST Cal-Sites**
0.379 mi. **HIST UST**
2003 ft. **Site 4 of 6 in cluster B** **ENF**
CIWQS
Relative: Lower **NON-CASE INFO**

Actual: 33 ft.

ENVIROSTOR:

Name:	SOLA OPTICAL USA, INC.
Address:	3600 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94954
Facility ID:	49300001
Status:	Refer: RWQCB
Status Date:	02/15/1990
Site Code:	200129
Site Type:	Federal Superfund
Site Type Detailed:	State Response or NPL
Acres:	Not reported
NPL:	YES
Regulatory Agencies:	US EPA
Lead Agency:	US EPA
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Berkeley
Assembly:	10
Senate:	03
Special Program:	* Rural County Survey Program
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Responsible Party
Latitude:	38.23375
Longitude:	-122.5918
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	CAD981171523
Alias Type:	EPA Identification Number
Alias Name:	110000783377
Alias Type:	EPA (FRS #)
Alias Name:	110033615835
Alias Type:	EPA (FRS #)
Alias Name:	P23082
Alias Type:	PCode
Alias Name:	200129
Alias Type:	Project Code (Site Code)
Alias Name:	49300001
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Discovery
Completed Date:	02/15/1988

SOLA OPTICAL USA INC (Continued) **S100848244**

Comments: FACILITY IDENTIFIED SONOMA COUNTY EH - WASTE SPILLS, LEAKING UG TANKS

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 04/22/1988
Comments: SITE SCREENING DONE RWQCB MITIGATING SITE

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

SLIC REG 2:
Region: 2
Facility ID: 49S0001
Facility Status: Preliminary site assessment workplan submitted
Date Closed: Not reported
Local Case #: Not reported
How Discovered: Tank Closure
Leak Cause: UNK
Leak Source: UNK
Date Confirmed: Not reported
Date Prelim Site Assmnt Workplan Submitted: 4/22/1992
Date Preliminary Site Assessment Began: Not reported
Date Pollution Characterization Began: Not reported
Date Remediation Plan Submitted: Not reported
Date Remedial Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

Region: 2
Facility ID: 49S0001
Facility Status: Leak being confirmed
Date Closed: Not reported
Local Case #: Not reported
How Discovered: UNK
Leak Cause: Not reported
Leak Source: Not reported
Date Confirmed: Not reported
Date Prelim Site Assmnt Workplan Submitted: Not reported
Date Preliminary Site Assessment Began: Not reported
Date Pollution Characterization Began: Not reported
Date Remediation Plan Submitted: Not reported
Date Remedial Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

Calsite:
Name: SOLA OPTICAL USA, INC.
Address: 3600 LAKEVILLE HWY
City: PETALUMA
Region: BERKELEY

SOLA OPTICAL USA INC (Continued) **S100848244**

Facility ID:	49300001
Facility Type:	NPRP
Type:	NPL SITE, RP-FUNDED
Branch:	NC
Branch Name:	NORTH COAST
File Name:	Not reported
State Senate District:	02151990
Status:	DOES NOT REQUIRE DTSC ACTION. REFERRED TO REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) LEAD
Status Name:	PROPERTY/SITE REFERRED TO RWQCB
Lead Agency:	ENVIRONMENTAL PROTECTION AGENCY
NPL:	Listed
SIC Code:	30
SIC Name:	MANU - RUBBER & MISC PLASTICS PRODUCTS
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
Staff Member Responsible for Site:	Not reported
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	SF
Region Water Control Board Name:	SAN FRANCISCO BAY
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	06
State Senate District Code:	03
Facility ID:	49300001
Activity:	DISC
Activity Name:	DISCOVERY
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	02151988
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	REFRW
Definition of Status:	PROPERTY/SITE REFERRED TO RWQCB
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	49300001
Activity:	SS
Activity Name:	SITE SCREENING
AWP Code:	Not reported

SOLA OPTICAL USA INC (Continued) **S100848244**

Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04221988
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	REFRW
Definition of Status:	PROPERTY/SITE REFERRED TO RWQCB
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Alternate Address:	1500 CADER LANE
Alternate City,St,Zip:	PETALUMA, CA 94952
Alternate Address:	FORMER: 3600 LAKEVILLE HWY
Alternate City,St,Zip:	PETALUMA, CA
Alternate Address:	1500 CADER LANE
Alternate City,St,Zip:	PETALUMA, CA 94952
Alternate Address:	3600 LAKEVILLE HWY
Alternate City,St,Zip:	PETALUMA, CA 94952
Alternate Address:	3600 LAKEVILLE HWY
Alternate City,St,Zip:	PETALUMA, CA 94954
Background Info:	Not reported
Comments Date:	01011989
Comments:	This is the date the site was first listed AWP pursuant to
Comments Date:	01011989
Comments:	Section 25356.
Comments Date:	02151988
Comments:	FACILITY IDENTIFIED SONOMA COUNTY EH - WASTE SPILLS, LEAKING
Comments Date:	02151988
Comments:	UG TANKS
Comments Date:	04221988
Comments:	SITE SCREENING DONE RWQCB MITIGATING SITE
Comments Date:	06011987
Comments:	INSPECTION(FED) PA1, SI1, HR1, CERCLIS/EPA
Comments Date:	08161989
Comments:	Groundwater and soil contain various VOCs including acetone.
Comments Date:	08161989
Comments:	If contaminants migrate off-site, people who touch or ingest
Comments Date:	08161989
Comments:	contaminated groundwater or soil may be at risk.
ID Name:	CALSTARS CODE
ID Value:	200129
ID Name:	BEP DATABASE PCODE
ID Value:	P23082
ID Name:	EPA IDENTIFICATION NUMBER
ID Value:	CAD981171523
Alternate Name:	SOLA OPTICAL USA, INC.
Alternate Name:	Not reported

SOLA OPTICAL USA INC (Continued) **S100848244**

Special Programs Code: RCSP
Special Programs Name: RURAL COUNTY SURVEY PROGRAM

HIST UST:

Name:	SOLA OPTICAL USA INC
Address:	3600 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
File Number:	00021759
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00021759.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

ENF:

Name:	SOLA OPTICAL USA
Address:	3600 LAKEVILLE
City,State,Zip:	PETALUMA, CA 94952
Region:	2
Facility Id:	257633
Agency Name:	Not reported
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	Industrial
Agency Type:	Not reported
# Of Agencies:	Not reported
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	3674
SIC Desc 1:	Semiconductors and Related Devices
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported

SOLA OPTICAL USA INC (Continued) **S100848244**

NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Enf Action
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	Not reported
Program Category1:	Not reported
Program Category2:	NPDESWW
# Of Programs:	Not reported
WDID:	Not reported
Reg Measure Id:	Not reported
Reg Measure Type:	Not reported
Region:	Not reported
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Not reported
Status Date:	Not reported
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Not reported
Individual/General:	Not reported
Fee Code:	Not reported
Direction/Voice:	Not reported
Enforcement Id(EID):	223065
Region:	2
Order / Resolution Number:	87-038
Enforcement Action Type:	Clean-up and Abatement Order
Effective Date:	04/15/1987
Adoption/Issuance Date:	Not reported
Achieve Date:	2/21/1990
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 2 494054001
Description:	GROUNDWATER CLEANUP WDR
Program:	NPDESWW
Latest Milestone Completion Date:	2/21/1990

SOLA OPTICAL USA INC (Continued) **S100848244**

# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Name:	SOLA OPTICAL USA
Address:	3600 LAKEVILLE
City,State,Zip:	PETALUMA, CA 94952
Region:	2
Facility Id:	257633
Agency Name:	Not reported
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	Industrial
Agency Type:	Not reported
# Of Agencies:	Not reported
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	3674
SIC Desc 1:	Semiconductors and Related Devices
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Enf Action
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	Not reported
Program Category1:	Not reported
Program Category2:	NPDESWW
# Of Programs:	Not reported
WDID:	Not reported
Reg Measure Id:	Not reported
Reg Measure Type:	Not reported
Region:	Not reported
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported

SOLA OPTICAL USA INC (Continued) **S100848244**

Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Not reported
Status Date:	Not reported
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Not reported
Individual/General:	Not reported
Fee Code:	Not reported
Direction/Voice:	Not reported
Enforcement Id(EID):	223064
Region:	2
Order / Resolution Number:	87-008
Enforcement Action Type:	Formal Refer to Attorney Gen
Effective Date:	05/20/1987
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 2 494054001
Description:	COMP 87-08-REFER MATTER TO EPA
Program:	NPDESWW
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Name:	SOLA OPTICAL USA
Address:	3600 LAKEVILLE
City,State,Zip:	PETALUMA, CA 94952
Region:	2
Facility Id:	257633
Agency Name:	Not reported
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	Industrial
Agency Type:	Not reported
# Of Agencies:	Not reported
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	3674
SIC Desc 1:	Semiconductors and Related Devices

SOLA OPTICAL USA INC (Continued) **S100848244**

SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Enf Action
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	Not reported
Program Category1:	Not reported
Program Category2:	NPDESWW
# Of Programs:	Not reported
WDID:	Not reported
Reg Measure Id:	Not reported
Reg Measure Type:	Not reported
Region:	Not reported
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Not reported
Status Date:	Not reported
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Not reported
Individual/General:	Not reported
Fee Code:	Not reported
Direction/Voice:	Not reported
Enforcement Id(EID):	222733
Region:	2
Order / Resolution Number:	89-116
Enforcement Action Type:	Admin Civil Liability
Effective Date:	11/15/1989
Adoption/Issuance Date:	Not reported

SOLA OPTICAL USA INC (Continued) **S100848244**

Achieve Date:	12/11/1989
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 2 494054001
Description:	ENF ORDER
Program:	NPDESWW
Latest Milestone Completion Date:	12/11/1989
# Of Programs1:	1
Total Assessment Amount:	2000
Initial Assessed Amount:	0
Liability $ Amount:	2000
Project $ Amount:	0
Liability $ Paid:	2000
Project $ Completed:	0
Total $ Paid/Completed Amount:	2000

Name:	SOLA OPTICAL USA
Address:	3600 LAKEVILLE
City,State,Zip:	PETALUMA, CA 94952
Region:	2
Facility Id:	257633
Agency Name:	Not reported
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	Industrial
Agency Type:	Not reported
# Of Agencies:	Not reported
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	3674
SIC Desc 1:	Semiconductors and Related Devices
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Enf Action
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	Not reported
Program Category1:	Not reported
Program Category2:	NPDESWW
# Of Programs:	Not reported

SOLA OPTICAL USA INC (Continued) **S100848244**

WDID:	Not reported
Reg Measure Id:	Not reported
Reg Measure Type:	Not reported
Region:	Not reported
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Not reported
Status Date:	Not reported
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Not reported
Individual/General:	Not reported
Fee Code:	Not reported
Direction/Voice:	Not reported
Enforcement Id(EID):	222729
Region:	2
Order / Resolution Number:	90-030
Enforcement Action Type:	Clean-up and Abatement Order
Effective Date:	02/21/1990
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 2 494054001
Description:	SCR-RECISION OF ORDER #87-038
Program:	NPDESWW
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

CIWQS:

Name:	SOLA OPTICAL USA
Address:	3600 LAKEVILLE
City,State,Zip:	PETALUMA, CA 94952
Agency:	Sola Optical USA Inc
Agency Address:	1500 Cader Lane, Petaluma, CA 94954

SOLA OPTICAL USA INC (Continued) **S100848244**

Place/Project Type:	Other
SIC/NAICS:	3674
Region:	2
Program:	NPDESWW
Regulatory Measure Status:	Historical
Regulatory Measure Type:	WDR
Order Number:	98-0822
WDID:	2 494054001
NPDES Number:	Not reported
Adoption Date:	08/19/1998
Effective Date:	08/19/1998
Termination Date:	Not reported
Expiration/Review Date:	Not reported
Design Flow:	0.0001
Major/Minor:	Not reported
Complexity:	B
TTWQ:	2
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	Not reported
Longitude:	Not reported

NON-CASE INFO:

Name:	SOLA OPTICAL USA INC.
Address:	3600 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94954
Global ID:	SLT2O370260
Case Type:	Non-Case Information
Status:	Informational Item
Status Date:	01/01/2011
Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Case Worker:	UUU
Local Agency:	US ENVIRONMENTAL PROTECTION AGENCY
RB Case Number:	49S0001
Loc Case Number:	Not reported
File Location:	Not reported
Potential Contaminants of Concern:	Not reported
Potential Media Affected:	Not reported
Site History:	Not reported
Begin Date:	2001-03-08 00:00:00
How Discovered:	* UNK
How Discovered Description:	Not reported
Stop Method:	Not reported
Stop Description:	Not reported
Latitude:	38.234508
Longitude:	-122.590772
Geotracker:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SLT2O370260

B11
SSE
1/4-1/2
0.401 mi.
2118 ft.

Relative:
Lower

Actual:
32 ft.

SOLA OPTICAL USA, INC.
3600 LAKEVILLE HWY
PETALUMA, CA 94952

Site 5 of 6 in cluster B

Delisted NPL
SEMS
RCRA-SQG
US ENG CONTROLS
US INST CONTROLS
ROD
PRP
FINDS
HAZNET
CERS
HWTS

1001075498
CAD981171523

Delisted NPL:

EPA Region:	9
EPA ID:	CAD981171523
Site ID:	902280
Name:	SOLA OPTICAL USA, INC.
Address:	3600 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Federal Description:	N
Latitude:	38.2332
Longitude:	-122.5931
Deleted Date:	2013-10-31 00:00:00

SEMS:

Site ID:	0902280
EPA ID:	CAD981171523
Name:	SOLA OPTICAL USA, INC.
Address:	3600 LAKEVILLE HWY
Address 2:	Not reported
City,State,Zip:	PETALUMA, CA 94952
Cong District:	06,2
FIPS Code:	06097
Latitude:	+38.233200
Longitude:	-122.593100
FF:	N
NPL:	Deleted from the Final NPL
Non NPL Status:	Not reported

SEMS Detail:

Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	01
Action Code:	RA
Action Name:	RA
SEQ:	1
Start Date:	2007-09-27 04:00:00
Finish Date:	5/8/2013 5:00:00 AM
Qual:	Not reported
Current Action Lead:	EPA Perf In-Hse

Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.

SOLA OPTICAL USA, INC. (Continued) **1001075498**

NPL: D
FF: N
OU: 00
Action Code: PA
Action Name: PA
SEQ: 1
Start Date: 1987-06-01 04:00:00
Finish Date: 6/1/1987 4:00:00 AM
Qual: H
Current Action Lead: EPA Perf

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 00
Action Code: ND
Action Name: DELETION
SEQ: 1
Start Date: 2013-07-24 04:00:00
Finish Date: 10/31/2013 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 00
Action Code: FE
Action Name: 5 YEAR
SEQ: 1
Start Date: 2000-03-30 05:00:00
Finish Date: 9/29/2000 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 00
Action Code: FE
Action Name: 5 YEAR
SEQ: 3
Start Date: 2010-09-24 04:00:00
Finish Date: 9/24/2010 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 09

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	00
Action Code:	NP
Action Name:	PROPOSED
SEQ:	1
Start Date:	1988-06-24 04:00:00
Finish Date:	6/24/1988 4:00:00 AM
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	00
Action Code:	CR
Action Name:	CI
SEQ:	2
Start Date:	2006-02-16 05:00:00
Finish Date:	3/10/2006 5:00:00 AM
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	00
Action Code:	CQ
Action Name:	CLSOUT R
SEQ:	1
Start Date:	2013-05-08 05:00:00
Finish Date:	5/8/2013 5:00:00 AM
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	00
Action Code:	FE
Action Name:	5 YEAR
SEQ:	2
Start Date:	2005-06-30 04:00:00
Finish Date:	9/28/2005 4:00:00 AM
Qual:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Current Action Lead:	EPA Perf
Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	01
Action Code:	RO
Action Name:	ROD
SEQ:	1
Start Date:	1991-09-27 04:00:00
Finish Date:	9/27/1991 4:00:00 AM
Qual:	R
Current Action Lead:	EPA Perf
Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	00
Action Code:	RS
Action Name:	RV ASSESS
SEQ:	1
Start Date:	1989-08-03 04:00:00
Finish Date:	8/3/1989 4:00:00 AM
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	00
Action Code:	TU
Action Name:	NOID
SEQ:	1
Start Date:	2013-07-24 04:00:00
Finish Date:	7/24/2013 4:00:00 AM
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	00
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Start Date: 1987-06-01 04:00:00
Finish Date: 6/1/1987 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 00
Action Code: CM
Action Name: PCOR
SEQ: 1
Start Date: 1992-08-14 04:00:00
Finish Date: 8/14/1992 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 00
Action Code: NF
Action Name: NPL FINL
SEQ: 1
Start Date: 1990-02-21 05:00:00
Finish Date: 2/21/1990 5:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 00
Action Code: CR
Action Name: CI
SEQ: 1
Start Date: 1989-06-01 04:00:00
Finish Date: 9/27/1991 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 00

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Action Code:	SI
Action Name:	SI
SEQ:	1
Start Date:	1987-06-01 04:00:00
Finish Date:	6/1/1987 4:00:00 AM
Qual:	H
Current Action Lead:	EPA Perf
Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	00
Action Code:	RS
Action Name:	RV ASSESS
SEQ:	2
Start Date:	1991-05-28 04:00:00
Finish Date:	5/28/1991 4:00:00 AM
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	01
Action Code:	ED
Action Name:	R/H ASMT
SEQ:	1
Start Date:	1991-02-01 05:00:00
Finish Date:	5/3/1991 4:00:00 AM
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.
NPL:	D
FF:	N
OU:	00
Action Code:	MA
Action Name:	ST COOP
SEQ:	1
Start Date:	1991-09-30 04:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	09
Site ID:	0902280
EPA ID:	CAD981171523
Site Name:	SOLA OPTICAL USA, INC.

SOLA OPTICAL USA, INC. (Continued) **1001075498**

NPL: D
FF: N
OU: 01
Action Code: AR
Action Name: ADMIN REC
SEQ: 1
Start Date: 1991-05-25 04:00:00
Finish Date: Not reported
Qual: E
Current Action Lead: EPA Perf

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 00
Action Code: HR
Action Name: HAZRANK
SEQ: 1
Start Date: 1987-06-01 04:00:00
Finish Date: 6/1/1987 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 00
Action Code: AR
Action Name: ADMIN REC
SEQ: 2
Start Date: 2000-08-10 04:00:00
Finish Date: Not reported
Qual: Not reported
Current Action Lead: EPA Perf

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 01
Action Code: BD
Action Name: PRP RI/FS
SEQ: 1
Start Date: 1989-10-03 04:00:00
Finish Date: 9/27/1991 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Ovrsght

Region: 09

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 01
Action Code: ME
Action Name: PRP LR
SEQ: 1
Start Date: 2008-02-20 05:00:00
Finish Date: 5/8/2013 5:00:00 AM
Qual: Not reported
Current Action Lead: EPA Ovrsght

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 01
Action Code: BF
Action Name: PRP RA
SEQ: 1
Start Date: 1991-09-27 04:00:00
Finish Date: 9/27/1991 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Ovrsght

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 01
Action Code: BE
Action Name: PRP RD
SEQ: 1
Start Date: 1991-09-27 04:00:00
Finish Date: 9/27/1991 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Ovrsght

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 01
Action Code: BE
Action Name: PRP RD
SEQ: 2
Start Date: 2007-09-27 04:00:00
Finish Date: 2/20/2008 5:00:00 AM
Qual: Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Current Action Lead: EPA Ovrsght

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 01
Action Code: BF
Action Name: PRP RA
SEQ: 2
Start Date: 2008-02-20 05:00:00
Finish Date: 5/29/2012 5:00:00 AM
Qual: Not reported
Current Action Lead: EPA Ovrsght

Region: 09
Site ID: 0902280
EPA ID: CAD981171523
Site Name: SOLA OPTICAL USA, INC.
NPL: D
FF: N
OU: 01
Action Code: OM
Action Name: OM
SEQ: 1
Start Date: 2007-09-27 04:00:00
Finish Date: 5/8/2013 5:00:00 AM
Qual: Not reported
Current Action Lead: EPA Ovrsght

RCRA-SQG:
Date Form Received by Agency: 19960901
Handler Name: SOLA OPTICAL USA INC
Handler Address: 1500 CADER LN
Handler City,State,Zip: PETALUMA, CA 94954
EPA ID: CAD981171523
Contact Name: Not reported
Contact Address: Not reported
Contact City,State,Zip: Not reported
Contact Telephone: Not reported
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 09
Land Type: Private
Federal Waste Generator Description: Small Quantity Generator
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: 1500 CADER LN
Mailing City,State,Zip: PETALUMA, CA 94954

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Owner Name:	Not reported
Owner Type:	Not reported
Operator Name:	Not reported
Operator Type:	Not reported
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:	NN
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
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:	20060905
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:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Manifest Broker: Not reported
Sub-Part P Indicator: No

Handler - Owner Operator:
Owner/Operator Indicator: Owner
Owner/Operator Name: SOLA INTERNATIONAL LTD
Legal Status: Private
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 2420 SANDHILL RD
Owner/Operator City,State,Zip: MENLO PARK, CA 94025
Owner/Operator Telephone: 415-324-6868
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19960901
Handler Name: SOLA OPTICAL USA INC
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: 19960901
Handler Name: SOLA OPTICAL USA INC
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: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 19951114
Handler Name: SOLA OPTICAL USA INC
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

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Receive Date:	19900411
Handler Name: SOLA OPTICAL	
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:	19920226
Handler Name: SOLA OPTICAL USA INC	
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:	19940328
Handler Name: SOLA OPTICAL USA. INC.	
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:	19960216
Handler Name: SOLA OPTICAL USA, INC.	
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:	19990304
Handler Name: SOLA OPTICAL USA, INC.	
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No

SOLA OPTICAL USA, INC. (Continued) **1001075498**

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: 20001012
Handler Name: SOLA OPTICAL USA, INC.
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: 334413
NAICS Description: SEMICONDUCTOR AND RELATED DEVICE MANUFACTURING

NAICS Code: 339115
NAICS Description: OPHTHALMIC GOODS MANUFACTURING

Facility Has Received Notices of Violation:
Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: Generators - General
Date Violation was Determined: 20001205
Actual Return to Compliance Date: 20020930
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 002
Date of Enforcement Action: 20010510
Enforcement Responsible Agency: EPA
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: CSEIT
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

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 - General
Date Violation was Determined: 20001205
Actual Return to Compliance Date: 20020930
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 003
Date of Enforcement Action: 20020930
Enforcement Responsible Agency: EPA
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: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: CSEIT
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 - General
Date Violation was Determined: 20001205
Actual Return to Compliance Date: 20020930
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Enforcement Identifier:	001
Date of Enforcement Action:	20010104
Enforcement Responsible Agency:	EPA
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:	Not reported
Enforcement Responsible Person:	CSEIT
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 - General
Date Violation was Determined:	20001205
Actual Return to Compliance Date:	20020930
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	001
Date of Enforcement Action:	20010104
Enforcement Responsible Agency:	EPA
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:	Not reported
Enforcement Responsible Person:	CSEIT
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

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 - General
Date Violation was Determined: 20001205
Actual Return to Compliance Date: 20020930
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 003
Date of Enforcement Action: 20020930
Enforcement Responsible Agency: EPA
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: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: CSEIT
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 - General
Date Violation was Determined: 20001205
Actual Return to Compliance Date: 20020930
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Enforcement Identifier:	002
Date of Enforcement Action:	20010510
Enforcement Responsible Agency:	EPA
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:	CSEIT
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:	20001205
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CSEIT
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	20020930
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:	20001205
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CSEIT
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	20020930
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Evaluation Date:	20001205
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CSEIT
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	20020930
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:	20001205
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CSEIT
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	20020930
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:	20001205
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CSEIT
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	20020930
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:	20001205
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	CSEIT
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	20020930
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

SIte:

Name:	SOLA OPTICAL USA, INC.
Address:	3600 LAKEVILLE HWY
Address 2:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

City,State,Zip: PETALUMA, CA 94952
Event Code: Not reported
Action Taken Date: 03/30/2007
EPA ID: CAD981171523
Action Name: ROD Amendment
Action ID: 1
Operable Unit: 01
Contaminated Media: Groundwater
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2007
NPL Status: Deleted from the Final NPL
Superfund Alternative Agreement: N
Latitude: +38.233200
Longitude: -122.593100

Media:
EPA ID: CAD981171523
Contaminated Media: Groundwater
Action ID: 1
Operable Unit: 01
Action Name: ROD Amendment
Action Taken Date: 03/30/2007
Event Code: Not reported
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2007
NPL Status: Deleted from the Final NPL
Superfund Alternative Agreement: N
Latitude: +38.233200
Longitude: -122.593100

EPA ID: CAD981171523
Contaminated Media: Groundwater
Action ID: 1
Operable Unit: 01
Action Name: ROD Amendment
Action Taken Date: 03/30/2007
Event Code: Not reported
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2007
NPL Status: Deleted from the Final NPL
Superfund Alternative Agreement: N
Latitude: +38.233200
Longitude: -122.593100

EPA ID: CAD981171523
Contaminated Media: Groundwater
Action ID: 1
Operable Unit: 01
Action Name: Record of Decision

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Action Taken Date:	09/27/1991
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	1991
NPL Status:	Deleted from the Final NPL
Superfund Alternative Agreement:	N
Latitude:	+38.233200
Longitude:	-122.593100

EPA ID:	CAD981171523
Contaminated Media:	Groundwater
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	09/27/1991
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	1991
NPL Status:	Deleted from the Final NPL
Superfund Alternative Agreement:	N
Latitude:	+38.233200
Longitude:	-122.593100

EPA ID:	CAD981171523
Contaminated Media:	Groundwater
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	09/27/1991
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N
Fiscal Year:	1991
NPL Status:	Deleted from the Final NPL
Superfund Alternative Agreement:	N
Latitude:	+38.233200
Longitude:	-122.593100

EPA ID:	CAD981171523
Contaminated Media:	Groundwater
Action ID:	1
Operable Unit:	01
Action Name:	Record of Decision
Action Taken Date:	09/27/1991
Event Code:	Not reported
Contact Name:	Not reported
Contact Telephone:	Not reported
Event:	Not reported
Federal Facility:	N

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Fiscal Year: 1991
NPL Status: Deleted from the Final NPL
Superfund Alternative Agreement: N
Latitude: +38.233200
Longitude: -122.593100

EPA ID: CAD981171523
Contaminated Media: Groundwater
Action ID: 1
Operable Unit: 01
Action Name: Record of Decision
Action Taken Date: 09/27/1991
Event Code: Not reported
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 1991
NPL Status: Deleted from the Final NPL
Superfund Alternative Agreement: N
Latitude: +38.233200
Longitude: -122.593100

US INST CONTROLS:
Name: SOLA OPTICAL USA, INC.
Address: 3600 LAKEVILLE HWY
Address 2: Not reported
City,State,Zip: PETALUMA, CA 94952
EPA ID: CAD981171523
Action Name: ROD Amendment
Action ID: 1
Operable Unit: 01
Actual Date: 03/30/2007
Contaminated Media: Groundwater
Event Code: Not reported
Contact Name: Not reported
Contact Telephone: Not reported
Event: Not reported
Federal Facility: N
Fiscal Year: 2007
NPL Status: Deleted from the Final NPL
Superfund Alternative Agreement: N
Latitude: +38.233200
Longitude: -122.593100

ROD:
Name: SOLA OPTICAL USA, INC.
Address: 3600 LAKEVILLE HWY
City,State,Zip: PETALUMA, CA 94952
EPA ID: CAD981171523
RG: 9
Site ID: 902280
Action: GOVT ROD Amendment for PRP Remedy
Operable Unit Number: OVERALL SITE
SEQ ID: 1

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Action Completion: 2007-03-30 00:00:00
NPL Status: Deleted
Non NPL Status: Not reported

Name: SOLA OPTICAL USA, INC.
Address: 3600 LAKEVILLE HWY
City,State,Zip: PETALUMA, CA 94952
EPA ID: CAD981171523
RG: 9
Site ID: 902280
Action: GOVT ROD for PRP Remedy
Operable Unit Number: OVERALL SITE
SEQ ID: 1
Action Completion: 1991-09-27 00:00:00
NPL Status: Deleted
Non NPL Status: Not reported

PRP:
PRP Name: PILKINGTON VISIONCARE, INC.
PILKINGTON VISIONCARE, INC.
SOLA OPTICAL USA, INC.
SOLA OPTICAL USA, INC.

FINDS:
Registry ID: 110064129125

Click Here:

Environmental Interest/Information System:
California Department of Toxic Substances Control EnviroStor System (DTSC-EnviroStor) is an online search and Geographic Information System (GIS) tool for identifying sites that have known contamination or sites for which there may be reasons to investigate further. The EnviroStor 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.
SUPERFUND NPL
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

HAZNET:
Name: SOLA OPTICAL USA INC
Address: 1500 CADER LANE
Address 2: Not reported
City,State,Zip: PETALUMA, CA 949520000
Contact: ROMAN STARNO-DIR OF FACILITIES
Telephone: 7077639911
Mailing Name: Not reported
Mailing Address: 2277 PINE VIEW WAY

Year: 2001
Gepaid: CAD981171523
TSD EPA ID: CAD009452657
CA Waste Code: 272 - Polymeric resin waste
Disposal Method: D80 - Disposal, Land Fill

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Tons:	0.15
Year:	2001
Gepaid:	CAD981171523
TSD EPA ID:	CAD009452657
CA Waste Code:	272 - Polymeric resin waste
Disposal Method:	R01 - Recycler
Tons:	3.6608
Year:	2001
Gepaid:	CAD981171523
TSD EPA ID:	CAD009452657
CA Waste Code:	343 - Unspecified organic liquid mixture
Disposal Method:	T03 - Treatment, Incineration
Tons:	1.484
Year:	2001
Gepaid:	CAD981171523
TSD EPA ID:	CAD009452657
CA Waste Code:	133 - Aqueous solution with total organic residues 10 percent or more
Disposal Method:	R01 - Recycler
Tons:	0.2293
Year:	2001
Gepaid:	CAD981171523
TSD EPA ID:	CAD009452657
CA Waste Code:	271 - Organic monomer waste (includes unreacted resins)
Disposal Method:	T03 - Treatment, Incineration
Tons:	4.587
Year:	2001
Gepaid:	CAD981171523
TSD EPA ID:	CAD009452657
CA Waste Code:	272 - Polymeric resin waste
Disposal Method:	T03 - Treatment, Incineration
Tons:	0.2293
Year:	2000
Gepaid:	CAD981171523
TSD EPA ID:	CAD009452657
CA Waste Code:	352 - Other organic solids
Disposal Method:	D80 - Disposal, Land Fill
Tons:	0.4587
Year:	2000
Gepaid:	CAD981171523
TSD EPA ID:	CAD009452657
CA Waste Code:	272 - Polymeric resin waste
Disposal Method:	D80 - Disposal, Land Fill
Tons:	3.325
Year:	2000
Gepaid:	CAD981171523
TSD EPA ID:	CAD009452657
CA Waste Code:	272 - Polymeric resin waste
Disposal Method:	R01 - Recycler
Tons:	10.5695

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Year:	2000
Gepaid:	CAD981171523
TSD EPA ID:	CAD009452657
CA Waste Code:	343 - Unspecified organic liquid mixture
Disposal Method:	T03 - Treatment, Incineration
Tons:	0.756

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

Additional Info:

Year:	1995
Gen EPA ID:	CAD981171523
Shipment Date:	19951228
Creation Date:	7/29/1996 0:00:00
Receipt Date:	19951228
Manifest ID:	95110417
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	212 - Oxygenated solvents (acetone, butanol, ethyl acetate, etc.
RCRA Code:	F003
Meth Code:	R01 - Recycler
Quantity Tons:	1.2705
Waste Quantity:	385
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19951228
Creation Date:	7/29/1996 0:00:00
Receipt Date:	19951228
Manifest ID:	95110417
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.4587
Waste Quantity:	110
Quantity Unit:	G

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19951215
Creation Date:	7/26/1996 0:00:00
Receipt Date:	19951219
Manifest ID:	95140992
Trans EPA ID:	CAD010925576
Trans Name:	Not reported
Trans 2 EPA ID:	CAD009230244
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000646117
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	0.5
Waste Quantity:	1000
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19951215
Creation Date:	7/26/1996 0:00:00
Receipt Date:	19951219
Manifest ID:	95140992
Trans EPA ID:	CAD010925576
Trans Name:	Not reported
Trans 2 EPA ID:	CAD009230244
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000646117
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	4
Waste Quantity:	8000
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19951215
Creation Date:	7/26/1996 0:00:00
Receipt Date:	19951219

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Manifest ID:	95140992
Trans EPA ID:	CAD010925576
Trans Name:	Not reported
Trans 2 EPA ID:	CAD009230244
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000646117
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	T01 - Treatment, Tank
Quantity Tons:	0.05
Waste Quantity:	100
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19951129
Creation Date:	7/26/1996 0:00:00
Receipt Date:	19951201
Manifest ID:	95693150
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.3
Waste Quantity:	600
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19951129
Creation Date:	7/26/1996 0:00:00
Receipt Date:	19951201
Manifest ID:	95693150
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.06
Waste Quantity:	120
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19951129
Creation Date:	7/26/1996 0:00:00
Receipt Date:	19951201
Manifest ID:	95693150
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D002
Meth Code:	R01 - Recycler
Quantity Tons:	0.0075
Waste Quantity:	15
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19951129
Creation Date:	7/26/1996 0:00:00
Receipt Date:	19951201
Manifest ID:	95693150
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D002
Meth Code:	R01 - Recycler
Quantity Tons:	0.0175
Waste Quantity:	35
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19951128
Creation Date:	7/26/1996 0:00:00
Receipt Date:	19951128
Manifest ID:	95110439
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	212 - Oxygenated solvents (acetone, butanol, ethyl acetate, etc.
RCRA Code:	F003
Meth Code:	R01 - Recycler
Quantity Tons:	1.089
Waste Quantity:	330
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	1998
Gen EPA ID:	CAD981171523
Shipment Date:	19981202
Creation Date:	5/17/1999 0:00:00
Receipt Date:	19981203
Manifest ID:	98880035
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.125
Waste Quantity:	250
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19981202
Creation Date:	5/17/1999 0:00:00

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Receipt Date:	19981203
Manifest ID:	98880035
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.45
Waste Quantity:	900
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19981202
Creation Date:	5/17/1999 0:00:00
Receipt Date:	19981203
Manifest ID:	98880035
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	D001
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.225
Waste Quantity:	450
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19981202
Creation Date:	5/17/1999 0:00:00
Receipt Date:	19981203
Manifest ID:	98880035
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657

SOLA OPTICAL USA, INC. (Continued) **1001075498**

TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.9174
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19981202
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	98880035
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	1.5
Waste Quantity:	3000
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19981027
Creation Date:	12/8/1998 0:00:00
Receipt Date:	19981028
Manifest ID:	98568761
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	0.9
Waste Quantity:	1800
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19981027
Creation Date:	12/8/1998 0:00:00
Receipt Date:	19981028
Manifest ID:	98568761
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	181 - Other inorganic solid waste Organics
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	0.25
Waste Quantity:	500
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19981027
Creation Date:	12/8/1998 0:00:00
Receipt Date:	19981028
Manifest ID:	98568761
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.9174
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19981027
Creation Date:	12/8/1998 0:00:00
Receipt Date:	19981028
Manifest ID:	98568761
Trans EPA ID:	CAD009452657

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.6672
Waste Quantity:	160
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19980929
Creation Date:	12/7/1998 0:00:00
Receipt Date:	19980929
Manifest ID:	98571719
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.688
Waste Quantity:	165
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	1993
Gen EPA ID:	CAD981171523

Shipment Date:	19931221
Creation Date:	9/14/1995 0:00:00
Receipt Date:	19931221
Manifest ID:	92801303
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	212 - Oxygenated solvents (acetone, butanol, ethyl acetate, etc.
RCRA Code:	F003
Meth Code:	D99 - Disposal, Other
Quantity Tons:	1.089
Waste Quantity:	330
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19931221
Creation Date:	9/14/1995 0:00:00
Receipt Date:	19931221
Manifest ID:	92801303
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	D99 - Disposal, Other
Quantity Tons:	0.4587
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19931221
Creation Date:	9/14/1995 0:00:00
Receipt Date:	19931221
Manifest ID:	92801303
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	- Not reported
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	0.2293
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19931221
Creation Date:	9/14/1995 0:00:00
Receipt Date:	19931221
Manifest ID:	92801303
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	D99 - Disposal, Other
Quantity Tons:	0.2293
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19931221
Creation Date:	9/14/1995 0:00:00
Receipt Date:	19931221
Manifest ID:	92891951
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	D99 - Disposal, Other
Quantity Tons:	0.2293
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19931207
Creation Date:	9/14/1995 0:00:00
Receipt Date:	19931214
Manifest ID:	92891950

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Trans EPA ID:	ILD099202681
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000646117
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	1.75
Waste Quantity:	3500
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19931207
Creation Date:	9/14/1995 0:00:00
Receipt Date:	19931214
Manifest ID:	92891950
Trans EPA ID:	ILD099202681
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000646117
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	181 - Other inorganic solid waste Organics
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	0.5
Waste Quantity:	1000
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19931123
Creation Date:	9/14/1995 0:00:00
Receipt Date:	19931123
Manifest ID:	92801307
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste

SOLA OPTICAL USA, INC. (Continued) **1001075498**

RCRA Code:	D001
Meth Code:	D99 - Disposal, Other
Quantity Tons:	0.2293
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19931123
Creation Date:	9/14/1995 0:00:00
Receipt Date:	19931123
Manifest ID:	92801306
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	- Not reported
RCRA Code:	D001
Meth Code:	D99 - Disposal, Other
Quantity Tons:	0.4587
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19931123
Creation Date:	9/14/1995 0:00:00
Receipt Date:	19931123
Manifest ID:	92801306
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	212 - Oxygenated solvents (acetone, butanol, ethyl acetate, etc.
RCRA Code:	F003
Meth Code:	D99 - Disposal, Other
Quantity Tons:	0.9075
Waste Quantity:	275
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 5: Not reported

Additional Info:
Year: 1994
Gen EPA ID: CAD981171523

Shipment Date: 19941220
Creation Date: 3/28/1996 0:00:00
Receipt Date: 19941220
Manifest ID: 95110402
Trans EPA ID: CAD009452657
Trans Name: Not reported
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD009452657
Trans Name: Not reported
TSDF Alt EPA ID: CAD009452657
TSDF Alt Name: Not reported
Waste Code Description: 212 - Oxygenated solvents (acetone, butanol, ethyl acetate, etc.
RCRA Code: F003
Meth Code: R01 - Recycler
Quantity Tons: 0.9075
Waste Quantity: 275
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 19941220
Creation Date: 10/19/1995 0:00:00
Receipt Date: 19941229
Manifest ID: 95110403
Trans EPA ID: ILD099202681
Trans Name: Not reported
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAT000646117
Trans Name: Not reported
TSDF Alt EPA ID: CAT000646117
TSDF Alt Name: Not reported
Waste Code Description: 181 - Other inorganic solid waste Organics
RCRA Code: Not reported
Meth Code: D80 - Disposal, Land Fill
Quantity Tons: 0.15
Waste Quantity: 300
Quantity Unit: P
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 19941220
Creation Date: 3/28/1996 0:00:00
Receipt Date: 19941220

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Manifest ID:	95110402
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	- Not reported
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	0.4587
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19941220
Creation Date:	3/28/1996 0:00:00
Receipt Date:	19941220
Manifest ID:	95110402
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.4587
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19941220
Creation Date:	10/19/1995 0:00:00
Receipt Date:	19941229
Manifest ID:	95110403
Trans EPA ID:	ILD099202681
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000646117
Trans Name:	Not reported
TSDF Alt EPA ID:	CAT000646117
TSDF Alt Name:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	3.8
Waste Quantity:	7600
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19941220
Creation Date:	3/28/1996 0:00:00
Receipt Date:	19941220
Manifest ID:	95110402
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.2293
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19941207
Creation Date:	3/28/1996 0:00:00
Receipt Date:	19941214
Manifest ID:	92891974
Trans EPA ID:	ILD099202681
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000646117
Trans Name:	Not reported
TSDF Alt EPA ID:	CAT000646117
TSDF Alt Name:	Not reported
Waste Code Description:	181 - Other inorganic solid waste Organics
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	0.15
Waste Quantity:	300
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19941207
Creation Date:	3/28/1996 0:00:00
Receipt Date:	19941214
Manifest ID:	92891974
Trans EPA ID:	ILD099202681
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000646117
Trans Name:	Not reported
TSDF Alt EPA ID:	CAT000646117
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	3
Waste Quantity:	6000
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19941207
Creation Date:	3/28/1996 0:00:00
Receipt Date:	19941214
Manifest ID:	92891974
Trans EPA ID:	ILD099202681
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000646117
Trans Name:	Not reported
TSDF Alt EPA ID:	CAT000646117
TSDF Alt Name:	Not reported
Waste Code Description:	- Not reported
RCRA Code:	Not reported
Meth Code:	T01 - Treatment, Tank
Quantity Tons:	0.688
Waste Quantity:	165
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19941129
Creation Date:	10/19/1995 0:00:00
Receipt Date:	19941129
Manifest ID:	92891972
Trans EPA ID:	CAD009452657
Trans Name:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.9174
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	1999
Gen EPA ID:	CAD981171523
Shipment Date:	19991207
Creation Date:	4/4/2000 0:00:00
Receipt Date:	19991207
Manifest ID:	99824390
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	D001
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.187
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19991207
Creation Date:	4/4/2000 0:00:00
Receipt Date:	19991207
Manifest ID:	99824390
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657

SOLA OPTICAL USA, INC. (Continued) **1001075498**

TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.688
Waste Quantity:	165
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19991207
Creation Date:	4/4/2000 0:00:00
Receipt Date:	19991207
Manifest ID:	99824390
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	Not reported
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.374
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19991207
Creation Date:	4/4/2000 0:00:00
Receipt Date:	19991207
Manifest ID:	99824390
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.9174
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19991207
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	99824390
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	- Not reported
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	0.5
Waste Quantity:	1000
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19991207
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	99824390
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	0.225
Waste Quantity:	450
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19991207
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	99824390
Trans EPA ID:	CAD009452657

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	0.75
Waste Quantity:	1500
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19991026
Creation Date:	1/4/2000 0:00:00
Receipt Date:	19991027
Manifest ID:	99550627
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.688
Waste Quantity:	165
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19991026
Creation Date:	1/4/2000 0:00:00
Receipt Date:	19991027
Manifest ID:	99550627
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Meth Code:	R01 - Recycler
Quantity Tons:	0.688
Waste Quantity:	165
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19991026
Creation Date:	1/4/2000 0:00:00
Receipt Date:	19991027
Manifest ID:	99550627
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	- Not reported
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	0.2293
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2001
Gen EPA ID:	CAD981171523
Shipment Date:	20011213
Creation Date:	2/13/2002 0:00:00
Receipt Date:	20011213
Manifest ID:	21679312
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	Not reported
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.374
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010719
Creation Date:	10/1/2001 0:00:00
Receipt Date:	20010720
Manifest ID:	20309036
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	271 - Organic monomer waste (includes unreacted resins
RCRA Code:	Not reported
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	4.587
Waste Quantity:	1100
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010719
Creation Date:	10/1/2001 0:00:00
Receipt Date:	20010720
Manifest ID:	20309036
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.9174
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010719
Creation Date:	10/1/2001 0:00:00
Receipt Date:	20010720
Manifest ID:	20309036

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.4587
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20010510
Creation Date:	7/30/2001 0:00:00
Receipt Date:	20010514
Manifest ID:	20976165
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.075
Waste Quantity:	150
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20010510
Creation Date:	7/30/2001 0:00:00
Receipt Date:	20010514
Manifest ID:	20976165
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste

SOLA OPTICAL USA, INC. (Continued) **1001075498**

RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	0.15
Waste Quantity:	300
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010510
Creation Date:	7/30/2001 0:00:00
Receipt Date:	20010514
Manifest ID:	20976165
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	Not reported
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.175
Waste Quantity:	350
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010510
Creation Date:	7/30/2001 0:00:00
Receipt Date:	20010514
Manifest ID:	20976165
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.375
Waste Quantity:	750
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 5:	Not reported
Shipment Date:	20010315
Creation Date:	6/20/2001 0:00:00
Receipt Date:	20010319
Manifest ID:	20717862
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.2293
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010315
Creation Date:	6/20/2001 0:00:00
Receipt Date:	20010319
Manifest ID:	20717862
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.2293
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2000
Gen EPA ID:	CAD981171523
Shipment Date:	20001213
Creation Date:	3/22/2001 0:00:00
Receipt Date:	20001214

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Manifest ID:	20868548
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.9174
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20001213
Creation Date:	3/22/2001 0:00:00
Receipt Date:	20001214
Manifest ID:	20868548
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	0.374
Waste Quantity:	110
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20001213
Creation Date:	3/22/2001 0:00:00
Receipt Date:	20001214
Manifest ID:	20868548
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.45
Waste Quantity:	900
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20001213
Creation Date:	3/22/2001 0:00:00
Receipt Date:	20001214
Manifest ID:	20868548
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	D001
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.15
Waste Quantity:	300
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20001213
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	20868548
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	0.2
Waste Quantity:	400
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20001213
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	20868548
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	Not reported
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	1.4
Waste Quantity:	2800
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20001109
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	99330753
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.1
Waste Quantity:	200
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20001109
Creation Date:	1/12/2001 0:00:00
Receipt Date:	20001117
Manifest ID:	99330753
Trans EPA ID:	CAD009452657
Trans Name:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D007
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.0225
Waste Quantity:	45
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20001109
Creation Date:	1/12/2001 0:00:00
Receipt Date:	20001117
Manifest ID:	99330753
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.0075
Waste Quantity:	15
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20001109
Creation Date:	1/12/2001 0:00:00
Receipt Date:	20001117
Manifest ID:	99330753
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	T03 - Treatment, Incineration

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Quantity Tons:	0.39
Waste Quantity:	780
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	1997
Gen EPA ID:	CAD981171523
Shipment Date:	19971230
Creation Date:	7/23/1998 0:00:00
Receipt Date:	19971230
Manifest ID:	96687926
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	1.1467
Waste Quantity:	275
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19971230
Creation Date:	7/23/1998 0:00:00
Receipt Date:	19971230
Manifest ID:	96687926
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	1.8348
Waste Quantity:	440
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19971230
Creation Date:	7/23/1998 0:00:00
Receipt Date:	19971230
Manifest ID:	96687926
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	122 - Alkaline solution without metals (pH > 12.5
RCRA Code:	D002
Meth Code:	R01 - Recycler
Quantity Tons:	1.8348
Waste Quantity:	440
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19971230
Creation Date:	7/23/1998 0:00:00
Receipt Date:	19971230
Manifest ID:	96687926
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	2.6
Waste Quantity:	5200
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19971125
Creation Date:	7/23/1998 0:00:00
Receipt Date:	19971125
Manifest ID:	97200858
Trans EPA ID:	CAD009452657

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.187
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19971125
Creation Date:	7/23/1998 0:00:00
Receipt Date:	19971125
Manifest ID:	97200858
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	2.2
Waste Quantity:	4400
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19971125
Creation Date:	7/23/1998 0:00:00
Receipt Date:	19971125
Manifest ID:	97200858
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Meth Code:	R01 - Recycler
Quantity Tons:	1.8348
Waste Quantity:	440
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19971125
Creation Date:	7/23/1998 0:00:00
Receipt Date:	19971125
Manifest ID:	97200858
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	1.1467
Waste Quantity:	275
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19971028
Creation Date:	4/23/1998 0:00:00
Receipt Date:	19971028
Manifest ID:	96680769
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	0.45
Waste Quantity:	900
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Shipment Date:	19971028
Creation Date:	4/23/1998 0:00:00
Receipt Date:	19971028
Manifest ID:	96680769
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.9174
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	1996
Gen EPA ID:	CAD981171523

Shipment Date:	19961210
Creation Date:	9/12/1997 0:00:00
Receipt Date:	19961211
Manifest ID:	96351968
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D006
Meth Code:	R01 - Recycler
Quantity Tons:	0.0125
Waste Quantity:	25
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19961210
Creation Date:	9/12/1997 0:00:00
Receipt Date:	19961211
Manifest ID:	96351968
Trans EPA ID:	CAD009452657

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	0.015
Waste Quantity:	30
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19961210
Creation Date:	9/12/1997 0:00:00
Receipt Date:	19961211
Manifest ID:	96351968
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.0075
Waste Quantity:	15
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19961210
Creation Date:	9/12/1997 0:00:00
Receipt Date:	19961211
Manifest ID:	96351968
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D009

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Meth Code:	R01 - Recycler
Quantity Tons:	0.0075
Waste Quantity:	15
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19961126
Creation Date:	5/20/1997 0:00:00
Receipt Date:	19961127
Manifest ID:	95996600
Trans EPA ID:	CAD009452697
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	2.4
Waste Quantity:	4800
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19961126
Creation Date:	5/20/1997 0:00:00
Receipt Date:	19961127
Manifest ID:	95996600
Trans EPA ID:	CAD009452697
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	0.9174
Waste Quantity:	220
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Shipment Date:	19961126
Creation Date:	5/20/1997 0:00:00
Receipt Date:	19961127
Manifest ID:	95996600
Trans EPA ID:	CAD009452697
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	1.3761
Waste Quantity:	330
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19961029
Creation Date:	9/12/1997 0:00:00
Receipt Date:	19961029
Manifest ID:	95110425
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	3.3
Waste Quantity:	6600
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19961029
Creation Date:	9/12/1997 0:00:00
Receipt Date:	19961029
Manifest ID:	95110425
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657

SOLA OPTICAL USA, INC. (Continued) **1001075498**

Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	2.9815
Waste Quantity:	715
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	19961029
Creation Date:	9/12/1997 0:00:00
Receipt Date:	19961029
Manifest ID:	95110425
Trans EPA ID:	CAD009452657
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009452657
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009452657
TSDF Alt Name:	Not reported
Waste Code Description:	272 - Polymeric resin waste
RCRA Code:	D001
Meth Code:	R01 - Recycler
Quantity Tons:	1.8348
Waste Quantity:	440
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

CERS:

Name:	SOLA OPTICAL USA INC
Address:	1500 CADER LANE
City,State,Zip:	PETALUMA, CA 94954-6953
Site ID:	494928
CERS ID:	110000783377
CERS Description:	US EPA Air Emission Inventory System (EIS)

Affiliation:

Affiliation Type Desc:	Public Contact
Entity Name:	CLAIRE MCCARTHY
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

SOLA OPTICAL USA, INC. (Continued) **1001075498**

HWTS:

Name:	SOLA OPTICAL USA INC
Address:	1500 CADER LANE
Address 2:	Not reported
City,State,Zip:	PETALUMA, CA 949520000
EPA ID:	CAD981171523
Inactive Date:	06/30/2001
Create Date:	06/17/1988
Last Act Date:	09/14/2004
Mailing Name:	Not reported
Mailing Address:	2277 PINE VIEW WAY
Mailing Address 2:	Not reported
Mailing City,State,Zip:	PETALUMA, CA 949540000
Owner Name:	SOLA OPTICAL USA, INC
Owner Address:	PO BOX 6002
Owner Address 2:	Not reported
Owner City,State,Zip:	PETALUMA, CA 949556002
Contact Name:	ROMAN STARNO-DIR OF FACILITIES
Contact Address:	1500 CADER LANE
Contact Address 2:	Not reported
City,State,Zip:	PETALUMA, CA 949540000

NAICS:

EPA ID:	CAD981171523
Create Date:	2002-03-14 16:36:26.000
NAICS Code:	33911
NAICS Description:	Medical Equipment and Supplies Manufacturing
Issued EPA ID Date:	1988-06-17 00:00:00
Inactive Date:	2001-06-30 00:00:00
Facility Name:	SOLA OPTICAL USA INC
Facility Address:	1500 CADER LANE
Facility Address 2:	Not reported
Facility City:	PETALUMA
Facility County:	Not reported
Facility State:	CA
Facility Zip:	949520000

B12 **SOLA OPTICAL USA, INC** **CHMIRS** **S100833472**
SSE **1500 CADER LANE** **CA BOND EXP. PLAN** **N/A**
1/4-1/2 **PETALUMA, CA 94952** **EMI**
0.401 mi.
2118 ft. **Site 6 of 6 in cluster B**

Relative: **Lower**

Actual: **32 ft.**

CHMIRS:

Name:	Not reported
Address:	1500 CADER LANE
City,State,Zip:	PETALUMA, CA 94952
OES Incident Number:	17057
OES notification:	Not reported
OES Date:	12/20/1996
OES Time:	05:25:04 AM
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported

SOLA OPTICAL USA, INC (Continued) **S100833472**

Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	YES
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	CHEMICAL VAPOR
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1996
Agency:	co oes
Incident Date:	0430/12-20-96
Admin Agency:	Not reported
Amount:	55 gallons
Contained:	NO
Site Type:	OTHER
E Date:	Not reported
Substance:	urathane acurlate
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	NO
Number of Injuries:	NO
Number of Fatalities:	NO
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	product being moved overheated and auto ignited. sitting in container burning.

SOLA OPTICAL USA, INC (Continued) **S100833472**

CA BOND EXP. PLAN:

Reponsible Party:	RWQCB REFERRAL SITE
Project Revenue Source Company:	Not reported
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Not reported
Project Revenue Source Desc:	The Sola Optical site is proposed for the NPL. The RWQCB is the lead regulatory agency involved in site cleanup. Sola Optical USA, Inc., is the responsible party (RP). Until such time as the RWQCB refers the site to DHS for follow-up using Bond funds, no money will be budgeted from the fund for this site.
Site Description:	Since 1978, Sola Optical USA, Inc. has produced optical lenses at its Petaluma facility.
Hazardous Waste Desc:	The soil near the underground storage tanks was found to be contaminated with trichloroethane and methylene chloride, which are both use in the facility's manufacturing processes. These chemicals were stored in tanks from 1978 to 1982. Investigations show extensive contamination of ground water under the site by dichloroethene (DCE), trichloroethane (TCA), trichloroethylene (TCE) and methylene chloride (MCL).
Threat To Public Health & Env:	The nearest public water supply well which draws from the aquifer of concern is located 300 feet from the contaminated wells onsite. It supplies approximately 50,000 people of the City of Petaluma with domestic water supply. Hydraulic connection between the well discussed above and several contaminated onsite wells was observed in November, 1986.
Site Activity Status:	Contamination in soil and ground water near six underground storage tanks was discovered onsite in 1984. The underground tanks, along with soil to a depth of two feet beneath them, were excavated in 1985 and disposed of offsite. The RWQCB issued waste discharge requirements to Sola Optical in May, 1985. In April, 1987 the RWQCB issued a cleanup and abatement order. The current stage of the site cleanup is remedial investigation and feasibility study.

EMI:

Name:	SOLA OPTICAL USA, INC
Address:	1500 CADER LANE
City,State,Zip:	PETALUMA, CA 94952
Year:	1995
County Code:	49
Air Basin:	SF
Facility ID:	6083
Air District Name:	BA
SIC Code:	3851
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	12
Reactive Organic Gases Tons/Yr:	6
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	SOLA OPTICAL USA, INC
Address:	1500 CADER LANE
City,State,Zip:	PETALUMA, CA 94952
Year:	1996
County Code:	49
Air Basin:	SF

SOLA OPTICAL USA, INC (Continued) **S100833472**

Facility ID:	6083
Air District Name:	BA
SIC Code:	3851
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	12
Reactive Organic Gases Tons/Yr:	6
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	SOLA OPTICAL USA, INC
Address:	1500 CADER LANE
City,State,Zip:	PETALUMA, CA 94952
Year:	1997
County Code:	49
Air Basin:	SF
Facility ID:	6083
Air District Name:	BA
SIC Code:	3851
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	17
Reactive Organic Gases Tons/Yr:	10
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	SOLA OPTICAL USA, INC
Address:	1500 CADER LANE
City,State,Zip:	PETALUMA, CA 94952
Year:	1998
County Code:	49
Air Basin:	SF
Facility ID:	6083
Air District Name:	BA
SIC Code:	3851
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	32
Reactive Organic Gases Tons/Yr:	22
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	SOLA OPTICAL USA, INC
Address:	1500 CADER LANE
City,State,Zip:	PETALUMA, CA 94952

SOLA OPTICAL USA, INC (Continued) **S100833472**

Year:	1999
County Code:	49
Air Basin:	SF
Facility ID:	6083
Air District Name:	BA
SIC Code:	3851
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	20
Reactive Organic Gases Tons/Yr:	12
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	SOLA OPTICAL USA, INC
Address:	1500 CADER LANE
City,State,Zip:	PETALUMA, CA 94952
Year:	2000
County Code:	49
Air Basin:	SF
Facility ID:	6083
Air District Name:	BA
SIC Code:	3851
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	20
Reactive Organic Gases Tons/Yr:	12
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	SOLA OPTICAL USA, INC
Address:	1500 CADER LANE
City,State,Zip:	PETALUMA, CA 94952
Year:	2001
County Code:	49
Air Basin:	SF
Facility ID:	6083
Air District Name:	BA
SIC Code:	3851
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	14
Reactive Organic Gases Tons/Yr:	8
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

C13 **STERO DISHWASHING MACHINE** **LUST** **S105026671**
South **3200 LAKEVILLE** **HIST CORTESE** **N/A**
1/4-1/2 **SONOMA, CA 94952** **CERS**
0.435 mi.
2297 ft. **Site 1 of 2 in cluster C**

Relative:
Lower

Actual:
25 ft.

SONOMA CO. LUST:

Name:	STERO DISHWASHING MACHINE
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA
Region:	SONOMA
Regional Board:	49-0187
Closed or Referred:	Y
Confirm Date:	04/15/1997
LOP Number:	00002500
Staff:	Not reported
Decode of Staff:	Not reported
Global ID:	T0609700949
APN:	005-040-039
Notes:	CLOSED

LUST:

Name:	STERO DISHWASHING MACHINE
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Lead Agency:	SONOMA COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0609700949
Global Id:	T0609700949
Latitude:	38.233407
Longitude:	-122.596147
Status:	Completed - Case Closed
Status Date:	04/15/1997
Case Worker:	LCW
RB Case Number:	49-0187
Local Agency:	SONOMA COUNTY LOP
File Location:	All Files are on GeoTracker or in the Local Agency Database
Local Case Number:	00002500
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0609700949
Contact Type:	Local Agency Caseworker
Contact Name:	LOP CLOSED IN RB02
Organization Name:	SONOMA COUNTY LOP
Address:	625 FIFTH STREET
City:	SANTA ROSA
Email:	Not reported
Phone Number:	Not reported

Global Id:	T0609700949
Contact Type:	Regional Board Caseworker
Contact Name:	Regional Water Board
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY ST SUITE 1400
City:	OAKLAND
Email:	Not reported

STERO DISHWASHING MACHINE (Continued) **S105026671**

Phone Number: Not reported

LUST:
Global Id: T0609700949
Action Type: Other
Date: 02/27/1987
Action: Leak Discovery

Global Id: T0609700949
Action Type: Other
Date: 01/02/1965
Action: Leak Reported

LUST:
Global Id: T0609700949
Status: Open - Case Begin Date
Status Date: 02/27/1987

Global Id: T0609700949
Status: Open - Site Assessment
Status Date: 02/01/1991

Global Id: T0609700949
Status: Completed - Case Closed
Status Date: 04/15/1997

HIST CORTESE:
edr_fname: STERO DISHWASHING MACHINE
edr_fadd1: 3200 LAKEVILLE
City,State,Zip: SONOMA, CA 94952
Region: CORTESE
Facility County Code: 49
Reg By: LTNKA
Reg Id: 49-0187

CERS:
Name: STERO DISHWASHING MACHINE
Address: 3200 LAKEVILLE HWY
City,State,Zip: PETALUMA, CA 94952
Site ID: 246011
CERS ID: T0609700949
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Local Agency Caseworker
Entity Name: LOP CLOSED IN RB02 - SONOMA COUNTY LOP
Entity Title: Not reported
Affiliation Address: 625 FIFTH STREET
Affiliation City: SANTA ROSA
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Regional Board Caseworker

STERO DISHWASHING MACHINE (Continued) **S105026671**

Entity Name:	Regional Water Board - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title:	Not reported
Affiliation Address:	1515 CLAY ST SUITE 1400
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

C14 **THE STERO COMPANY** **LUST** **S100610155**
South **3200 LAKEVILLE HWY** **Cortese** **N/A**
1/4-1/2 **PETALUMA, CA 94952** **EMI**
0.435 mi. **WDS**
2297 ft. **Site 2 of 2 in cluster C** **CERS**

Relative:
Lower

Actual:
25 ft.

LUST REG 2:

Region:	2
Facility Id:	49-0187
Facility Status:	Case Closed
Case Number:	00002500
How Discovered:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Date Leak Confirmed:	Not reported
Oversight Program:	LUST
Prelim. Site Assesment Wokplan Submitted:	Not reported
Preliminary Site Assesment Began:	2/1/1991
Pollution Characterization Began:	Not reported
Pollution Remediation Plan Submitted:	Not reported
Date Remediation Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	Not reported

CORTESE:

Name:	STERO DISHWASHING MACHINE
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0609700949
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

THE STERO COMPANY (Continued) **S100610155**

File Name: Active Open

EMI:

Name:	THE STERO COMPANY
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Year:	1995
County Code:	49
Air Basin:	SF
Facility ID:	1611
Air District Name:	BA
SIC Code:	3589
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	THE STERO COMPANY
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Year:	1996
County Code:	49
Air Basin:	SF
Facility ID:	1611
Air District Name:	BA
SIC Code:	3589
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	THE STERO COMPANY
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Year:	1997
County Code:	49
Air Basin:	SF
Facility ID:	1611
Air District Name:	BA
SIC Code:	3589
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	2

THE STERO COMPANY (Continued) **S100610155**

Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	THE STERO COMPANY
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Year:	1998
County Code:	49
Air Basin:	SF
Facility ID:	1611
Air District Name:	BA
SIC Code:	3589
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	THE STERO COMPANY
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Year:	1999
County Code:	49
Air Basin:	SF
Facility ID:	1611
Air District Name:	BA
SIC Code:	3589
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	THE STERO COMPANY
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Year:	2000
County Code:	49
Air Basin:	SF
Facility ID:	1611
Air District Name:	BA
SIC Code:	3589
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported

THE STERO COMPANY (Continued) **S100610155**

Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Name:	THE STERO COMPANY
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Year:	2001
County Code:	49
Air Basin:	SF
Facility ID:	1611
Air District Name:	BA
SIC Code:	3589
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

WDS:

Name:	THE STERO CO
Address:	3200 Lakeville Hwy
City:	PETALUMA
Facility ID:	San Francisco Bay 49I007350
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	2
Facility Telephone:	7077620071
Facility Contact:	PAUL BRUNETTA
Agency Name:	STERO CO
Agency Address:	3200 Lakeville Hwy
Agency City,St,Zip:	Petaluma 949545675
Agency Contact:	PAUL BRUNETTA
Agency Telephone:	7077620071
Agency Type:	Private
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported

THE STERO COMPANY (Continued) **S100610155**

Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

CERS:

Name:	THE STERO COMPANY
Address:	3200 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94954
Site ID:	157205
CERS ID:	110010460517
CERS Description:	US EPA Air Emission Inventory System (EIS)

Affiliation:

Affiliation Type Desc:	Environmental Contact
Entity Name:	STEVE WESTERMAN
Entity Title:	BUSINESS UNIT MANAGER
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Environmental Contact
Entity Name:	TERRY GOODFELLOW
Entity Title:	DIRECTOR OF OPERATIONS
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Parent Company
Entity Name:	ILLINOIS TOOL WORKS INC
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported

THE STERO COMPANY (Continued) **S100610155**

Affiliation Country:	Not reported
Affiliation Zip:	94954
Affiliation Phone:	Not reported
Affiliation Type Desc:	Company Official
Entity Name:	George Goobanoff
Entity Title:	E H & S Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	94954
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	STERO
Entity Title:	OPERATOR
Affiliation Address:	3200 LAKEVILLE HWY
Affiliation City:	PETALUMA
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Public Contact
Entity Name:	George Goobanoff
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	94954
Affiliation Phone:	7077992543
Affiliation Type Desc:	Technical Contact
Entity Name:	George Goobanoff
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	94954
Affiliation Phone:	7077992543
Affiliation Type Desc:	Environmental Contact
Entity Name:	GEORGE GOOBANOFF
Entity Title:	ENVIRONMENTAL CONTACT
Affiliation Address:	3200 LAKEVILLE HWY
Affiliation City:	PETALUMA
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Facility Owner
Entity Name:	IL TOOL WORKS
Entity Title:	OWNER

THE STERO COMPANY (Continued) **S100610155**

Affiliation Address: 3600 WEST LAKE AVE
Affiliation City: GLENVIEW
Affiliation State: IL
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Public Contact
Entity Name: George Goobanoff
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

Name: THE STERO COMPANY
Address: 3200 LAKEVILLE HWY
City,State,Zip: PETALUMA, CA 94954
Site ID: 157205
CERS ID: 94954STRXX32LAK
CERS Description: Toxic Release Inventory

Affiliation:
Affiliation Type Desc: Environmental Contact
Entity Name: STEVE WESTERMAN
Entity Title: BUSINESS UNIT MANAGER
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Environmental Contact
Entity Name: TERRY GOODFELLOW
Entity Title: DIRECTOR OF OPERATIONS
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Parent Company
Entity Name: ILLINOIS TOOL WORKS INC
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: 94954
Affiliation Phone: Not reported

Affiliation Type Desc: Company Official
Entity Name: George Goobanoff

THE STERO COMPANY (Continued) **S100610155**

Entity Title:	E H & S Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	94954
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	STERO
Entity Title:	OPERATOR
Affiliation Address:	3200 LAKEVILLE HWY
Affiliation City:	PETALUMA
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Public Contact
Entity Name:	George Goobanoff
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	94954
Affiliation Phone:	7077992543
Affiliation Type Desc:	Technical Contact
Entity Name:	George Goobanoff
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	94954
Affiliation Phone:	7077992543
Affiliation Type Desc:	Environmental Contact
Entity Name:	GEORGE GOOBANOFF
Entity Title:	ENVIRONMENTAL CONTACT
Affiliation Address:	3200 LAKEVILLE HWY
Affiliation City:	PETALUMA
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Facility Owner
Entity Name:	IL TOOL WORKS
Entity Title:	OWNER
Affiliation Address:	3600 WEST LAKE AVE
Affiliation City:	GLENVIEW
Affiliation State:	IL
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

THE STERO COMPANY (Continued) **S100610155**

Affiliation Type Desc:	Public Contact
Entity Name:	George Goobanoff
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

15
SW
1/4-1/2
0.446 mi.
2357 ft.

PETALUMA VALLEY HOSPITAL **HIST CORTESE** **S102434435**
1360 MCDOWELL **N/A**
PETALUMA, CA 94952

Relative:
Lower

Actual:
24 ft.

HIST CORTESE:

edr_fname:	PETALUMA VALLEY HOSPITAL
edr_fadd1:	1360 MCDOWELL
City,State,Zip:	PETALUMA, CA 94952
Region:	CORTESE
Facility County Code:	49
Reg By:	LTNKA
Reg Id:	49-0109

16
SW
1/2-1
0.602 mi.
3176 ft.

ROYAL TALLOW & SOAP CO. (FORMER) **ENVIROSTOR** **S101482559**
2592 LAKEVILLE HWY **SWF/LF** **N/A**
PETALUMA, CA 94952 **LUST**
HIST UST
Cortese
HIST CORTESE
CERS

Relative:
Lower

Actual:
18 ft.

ENVIROSTOR:

Name:	ROYAL TALLOW & SOAP COMPANY
Address:	2592 LAKEVILLE HIGHWAY
City,State,Zip:	PETALUMA, CA 94952
Facility ID:	49280006
Status:	Refer: RWQCB
Status Date:	05/27/1994
Site Code:	Not reported
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Berkeley
Assembly:	10
Senate:	03
Special Program:	* Rural County Survey Program
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

Funding: Not reported
Latitude: 38.23059
Longitude: -122.6062
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: DARLING DELAWARE (CERCLIS)
Alias Type: Alternate Name
Alias Name: CAD046515599
Alias Type: EPA Identification Number
Alias Name: 49280006
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 01/28/1988
Comments: FACILITY IDENTIFIED IND DIR 1962, RWQCB #75-190 DISCH TO PETALUMA RIVER 7/17/75

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 04/22/1988
Comments: SITE SCREENING DONE POSS ONSITE CONTAM

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

SWF/LF (SWIS):
Name: FORMER ROYAL TALLOW AND SOAP FACILITY
Address: 2592 LAKEVILLE HIGHWAY
City,State,Zip: PETALUMA, CA 94954
Region: STATE
Facility ID: 49-CR-0042
SWIS Number: 49-CR-0042
Point of Contact: Dawn Liang
Is Archived: No
Is Closed Illegal Abandoned: No
Is Site Inert Debris Engineered Fill: No
Is Financial Assurances Responsible: No
Absorbed On: Not reported
Operational Status: Closed
Absorbed By: Not reported
Closed Illegal Abandoned Category: Not reported
EPA Federal Registry ID: Not reported
ARB District: Bay Area

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

SWRCB Region:	San Francisco Bay
Local Government:	Petaluma
Reporting Agency Legal Name:	County of Sonoma
Reporting Agency Department:	Department of Health Services, Environmental Health & Safety Section
Enforcing Agency Legal Name:	County of Sonoma
Enforcing Agency Department:	Department of Health Services, Environmental Health & Safety Section
Regulation Status:	Unpermitted

Activity:

SWIS Number:	49-CR-0042
Site Name:	Former Royal Tallow and Soap Facility
Activity:	Solid Waste Disposal Site
Activity Is Archived:	No
Category:	Disposal
Activity Classification:	Solid Waste Disposal Site
WDR Number:	Not reported
WDR Landfill Class:	Not reported
Cease Operation:	Not reported
Cease Operation Type:	Not reported
Inspection Frequency:	None
Throughput:	Not reported
Throughput Units:	Not reported
Remaining Capacity:	Not reported
Remaining Capacity Date:	Not reported
Capacity:	Not reported
Capacity Units:	Not reported
Total Acreage:	Not reported
Disposal Acreage:	Not reported
Permitted Elevation:	Not reported
Permitted Elevation Type:	Not reported
Permitted Depth:	Not reported
Permitted Depth Type:	Not reported
Point of Contact:	Dawn Liang
Site Operational Status:	Closed
Site Regulatory Status:	Unpermitted
Site Is Archived:	No
Is Closed Illegal Abandoned:	No
Is Site Inert Debris Engineered Fill:	No
Is Financial Assurances Responsible:	No
Absorbed On:	Not reported
Absorbed By:	Not reported
Closed Illegal Abandoned Category:	Not reported
EPA Federal Registry ID:	Not reported
County:	Sonoma
ARB District:	Bay Area
SWRCB Region:	San Francisco Bay
Local Government:	Petaluma
Street Address:	2592 Lakeville Highway
City:	Petaluma
State:	CA
ZIP Code:	94954
Reporting Agency Legal Name:	County of Sonoma
Reporting Agency Department:	Department of Health Services, Environmental Health & Safety Section
Enforcing Agency Legal Name:	County of Sonoma
Enforcing Agency Department:	Department of Health Services, Environmental Health & Safety Section

Operator:

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

SWIS Number:	49-CR-0042
Site Name:	Former Royal Tallow and Soap Facility
Site Operational Status:	Closed
Site Type:	Disposal Only
Site Regulatory Status:	Unpermitted
Latitude:	38.22993
Longitude:	-122.60533
Is Archived:	No
Operator:	Darling International, Inc.
Started On:	8/19/2015
Contact Name:	Not reported
Contact Title:	Not reported
Contact Email:	Not reported
Contact Phone:	(214) 717-0300
Street Address:	Bill McMurtry 251 O'Conner Ridge Blvd.
Operator City:	Irving
Operator State:	TX
Operator Zip:	75038

Owner:

SWIS Number:	49-CR-0042
Owner:	Baywood LLC
Owner Address:	Larry Wasem 414 Aviation Blvd.
Owner City:	Santa Rosa
Owner State:	CA
Owner Zip:	95403
Site Name:	Former Royal Tallow and Soap Facility
Site Operational Status:	Closed
Site Type:	Disposal Only
Site Regulatory Status:	Unpermitted
Latitude:	38.22993
Longitude:	-122.60533
Is Archived:	No
Started On:	8/19/2015
Contact Name:	Not reported
Contact Title:	Not reported
Contact Email:	LLwasern@wasern-USA.com
Contact Phone:	(707) 578-5344

Waste:

SWIS Number:	49-CR-0042
Site Name:	Former Royal Tallow and Soap Facility
Activity:	Solid Waste Disposal Site
Waste Type:	Mixed municipal
Site Is Archived:	No
Site Operational Status:	Closed
Site Regulatory Status:	Unpermitted
Site Type:	Disposal Only
Point of Contact:	Dawn Liang
Activity Is Archived:	No
Activity Operational Status:	Closed
Activity Regulatory Status:	Unpermitted
Activity Category:	Disposal
Activity Classification:	Solid Waste Disposal Site

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

SONOMA CO. LUST:

Name:	ROYAL TALLOW & SOAP CO.
Address:	2592 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA
Region:	SONOMA
Regional Board:	49-0142
Closed or Referred:	Y
Confirm Date:	05/18/2021
LOP Number:	00001359
Staff:	Not reported
Decode of Staff:	Not reported
Global ID:	T0609700905
APN:	005-060-041
Notes:	CLOSED

LUST:

Name:	ROYAL TALLOW & SOAP CO. (FORMER)
Address:	2592 LAKEVILLE HWY
City,State,Zip:	PETALUMA, CA 94952
Lead Agency:	SONOMA COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0609700905
Global Id:	T0609700905
Latitude:	38.230794516
Longitude:	-122.606174449
Status:	Completed - Case Closed
Status Date:	05/18/2021
Case Worker:	LCW
RB Case Number:	49-0142
Local Agency:	SONOMA COUNTY LOP
File Location:	All Files are on GeoTracker or in the Local Agency Database
Local Case Number:	00001359
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Site was closed in 2004. AEI Consultant's "Phse II Subsurface Investigation Report date September 2, 2014 indicates soil and groundwater contamination that greatly exceeds the levels when the site was closed in 2004. The site is reopened as of 12/9/15. Site was reopened on 12/19/2015 due to soil vapor, soil and groundwater contamination reported in a Phase II investigation that exceeded reported contamination when the site was originally closed in 2004. Four monitoring wells and 16 soil vapor wells have been installed. Four monitoring wells and 10 soil vapor wells have been properly destroyed. Site Remediation Post Site Reopening: From 9/17/2019 through 10/22/2019 approximately 5, 577.73 tons of soil was excavated and properly disposed. The excavation was measured as 80x130x10-12 deep. Approximately 21,040 pounds of RegenOx was placed on the floor of the excavation. Site Management Requirements: A Soil Management Plan for worker safety and waste disposal if excavating in area of residual contamination has been submitted and is on Geotracker. The Building Department has been notified of the Soil Management Plan. Newly proposed water supply wells may require siting and design by a qualified professional engineer or geologist. Sonoma County Permit and Resource Management Department (Permit Sonoma) has been notified. The site meets the Low Threat Closure Policy as follows: All General Criteria are met. Groundwater Specific Criteria is met by criteria 2.

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

Vapor Intrusion to Indoor Air Criteria is met by criteria 2a, scenario 4. Direct Contact and Outdoor Air Exposure Criteria is met by criteria 3a. The above findings were reviewed and concurred with by the LOP Licensed Professional. Soil vapor wells and monitoring wells have been destroyed. All investigative derived wastes have been properly disposed. SITE CLOSED ON 5/18/21

LUST:
Global Id: T0609700905
Contact Type: Regional Board Caseworker
Contact Name: ALYX KARPOWICZ
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 Clay St., Suite 1400
City: OAKLAND
Email: akarpowicz@waterboards.ca.gov
Phone Number: 5106222427

Global Id: T0609700905
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 02/02/2016
Action: Email Correspondence

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 09/13/2017
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 08/15/2018
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 03/14/2019
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 09/18/2018
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 09/18/2018
Action: Staff Letter

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 02/23/2021
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 02/18/2021
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 02/23/2021
Action: Notification - Public Notice of Case Closure

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 03/16/2021
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 02/23/2021
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 02/23/2021
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 05/18/2021
Action: Closure/No Further Action Letter

Global Id: T0609700905
Action Type: RESPONSE
Date: 02/14/2018
Action: Soil and Water Investigation Report

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 06/16/2016
Action: Email Correspondence

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 11/28/2018
Action: Clean Up Fund - Case Closure Review Summary Report (RSR)

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 07/25/2017
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

Date: 02/23/2021
Action: LOP Case Closure Summary to RB

Global Id: T0609700905
Action Type: Other
Date: 06/30/1989
Action: Leak Stopped

Global Id: T0609700905
Action Type: RESPONSE
Date: 08/12/2016
Action: Site Investigation Workplan - Regulator Responded

Global Id: T0609700905
Action Type: RESPONSE
Date: 11/18/2019
Action: Well Installation Workplan - Regulator Responded

Global Id: T0609700905
Action Type: RESPONSE
Date: 04/02/2021
Action: Well Destruction Workplan - Regulator Responded

Global Id: T0609700905
Action Type: RESPONSE
Date: 06/23/2017
Action: Other Workplan - Regulator Responded

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 05/10/2016
Action: Staff Letter

Global Id: T0609700905
Action Type: RESPONSE
Date: 06/29/2018
Action: CAP/RAP - Feasibility Study Report - Regulator Responded

Global Id: T0609700905
Action Type: RESPONSE
Date: 08/18/2017
Action: Other Workplan - Regulator Responded

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 04/03/2018
Action: Staff Letter

Global Id: T0609700905
Action Type: REMEDIATION
Date: 09/17/2019
Action: Excavation

Global Id: T0609700905
Action Type: RESPONSE
Date: 06/23/2017
Action: CAP/RAP - Feasibility Study Report

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

Global Id: T0609700905
Action Type: RESPONSE
Date: 09/05/2018
Action: Well Destruction Workplan - Regulator Responded

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 12/09/2015
Action: Staff Letter

Global Id: T0609700905
Action Type: RESPONSE
Date: 03/14/2019
Action: Well Destruction Workplan - Regulator Responded

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 08/16/2016
Action: Staff Letter

Global Id: T0609700905
Action Type: RESPONSE
Date: 08/28/2020
Action: Request for Closure - Regulator Responded

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 12/09/2015
Action: Notice of Responsibility

Global Id: T0609700905
Action Type: RESPONSE
Date: 08/18/2017
Action: Soil and Water Investigation Workplan - Addendum - Regulator Responded

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 12/09/2015
Action: Staff Letter

Global Id: T0609700905
Action Type: REMEDIATION
Date: 12/21/2000
Action: Pump & Treat (P&T) Groundwater

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 09/02/2020
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 11/20/2019
Action: Staff Letter

Global Id: T0609700905
Action Type: Other

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

Date: 06/30/1989
Action: Leak Discovery

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 07/30/2004
Action: Closure/No Further Action Letter

Global Id: T0609700905
Action Type: RESPONSE
Date: 09/16/2015
Action: Site Assessment Report

Global Id: T0609700905
Action Type: REMEDIATION
Date: 04/05/2000
Action: Excavation

Global Id: T0609700905
Action Type: Other
Date: 06/30/1989
Action: Leak Reported

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 07/24/2003
Action: LOP Case Closure Summary to RB

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 04/18/2017
Action: Staff Letter

Global Id: T0609700905
Action Type: ENFORCEMENT
Date: 12/09/2015
Action: Notice of Responsibility

Global Id: T0609700905
Action Type: RESPONSE
Date: 02/20/2017
Action: Soil Vapor Intrusion Investigation Report

LUST:
Global Id: T0609700905
Status: Open - Case Begin Date
Status Date: 02/28/1989

Global Id: T0609700905
Status: Open - Site Assessment
Status Date: 09/18/1989

Global Id: T0609700905
Status: Open - Site Assessment
Status Date: 09/05/1990

Global Id: T0609700905

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

Status: Open - Remediation
Status Date: 05/01/1995

Global Id: T0609700905
Status: Open - Remediation
Status Date: 02/03/2000

Global Id: T0609700905
Status: Open - Verification Monitoring
Status Date: 01/13/2003

Global Id: T0609700905
Status: Completed - Case Closed
Status Date: 07/30/2004

Global Id: T0609700905
Status: Open - Reopen Case
Status Date: 12/09/2015

Global Id: T0609700905
Status: Open - Site Assessment
Status Date: 12/09/2015

Global Id: T0609700905
Status: Open - Verification Monitoring
Status Date: 10/22/2019

Global Id: T0609700905
Status: Open - Eligible for Closure
Status Date: 02/23/2021

Global Id: T0609700905
Status: Completed - Case Closed
Status Date: 05/18/2021

HIST UST:
Name: ROYAL TALLOW AND SOAP CO
Address: 2592 LAKEVILLE HWY
City,State,Zip: PETALUMA, CA 94952
File Number: 000216AC
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/000216AC.pdf
Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Click here for Geo Tracker PDF:

CORTESE:
Name: ROYAL TALLOW & SOAP CO. (FORMER)
Address: 2592 LAKEVILLE HWY
City,State,Zip: PETALUMA, CA 94952
Region: CORTESE
Envirostor Id: Not reported
Global ID: T0609700905
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: ROYAL TALLOW & SOAP COMPA
edr_fadd1: 2592 LAKEVILLE
City,State,Zip: PETALUMA, CA 94952
Region: CORTESE
Facility County Code: 49
Reg By: LTNKA
Reg Id: 49-0142

CERS:
Name: FORMER ROYAL TALLOW AND SOAP FACILITY
Address: 2592 LAKEVILLE HIGHWAY
City,State,Zip: PETALUMA, CA
Site ID: 508726
CERS ID: 49-CR-0042
CERS Description: Solid Waste and Recycle Sites

Affiliation:
Affiliation Type Desc: Legal Operator
Entity Name: Darling International, Inc.
Entity Title: Not reported
Affiliation Address: Bill McMurtry251 O'Conner Ridge Blvd.
Affiliation City: Irving

ROYAL TALLOW & SOAP CO. (FORMER) (Continued) **S101482559**

Affiliation State: TX
Affiliation Country: Not reported
Affiliation Zip: 75038
Affiliation Phone: 2147170300

Affiliation Type Desc: Legal Owner
Entity Name: Baywood LLC
Entity Title: Not reported
Affiliation Address: Larry Wasem414 Aviation Blvd.
Affiliation City: Santa Rosa
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 95403
Affiliation Phone: 7075785344

Name: ROYAL TALLOW & SOAP CO. (FORMER)
Address: 2592 LAKEVILLE HWY
City,State,Zip: PETALUMA, CA 94952
Site ID: 217153
CERS ID: T0609700905
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: ALYX KARPOWICZ - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title: Not reported
Affiliation Address: 1515 Clay St., Suite 1400
Affiliation City: OAKLAND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: 5106222427

Affiliation Type Desc: Local Agency Caseworker
Entity Name: DARCY BERING - SONOMA COUNTY LOP
Entity Title: Not reported
Affiliation Address: 625 FIFTH STREET
Affiliation City: SANTA ROSA
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Regional Board Caseworker
Entity Name: Regional Water Board - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title: Not reported
Affiliation Address: 1515 CLAY ST SUITE 1400
Affiliation City: OAKLAND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

17
SW
1/2-1
0.890 mi.
4697 ft.

CASA GRANDE LANDFILL
WEST END OF CASA GRANDE ROAD
PETALUMA, CA 94952

ENVIROSTOR
SWF/LF
Financial Assurance
CERS

S100186370
N/A

Relative:
Lower

Actual:
13 ft.

ENVIROSTOR:

Name:	CASA GRANDE LANDFILL
Address:	WEST END OF CASA GRANDE ROAD
City,State,Zip:	PETALUMA, CA 94952
Facility ID:	49490012
Status:	Refer: RWQCB
Status Date:	05/11/1988
Site Code:	Not reported
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Berkeley
Assembly:	Not reported
Senate:	Not reported
Special Program:	* Rural County Survey Program
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	38.23104
Longitude:	-122.6070
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	110013911437
Alias Type:	EPA (FRS #)
Alias Name:	49490012
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Discovery
Completed Date:	04/26/1988
Comments:	FACILITY IDENTIFIED SWIS 49 AA 0009 T5N R7W S35
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	05/11/1988
Comments:	SITE SCREENING DONE CALDERON LIST RANK 14 FOR SWAT
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

CASA GRANDE LANDFILL (Continued) **S100186370**

Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SWF/LF (SWIS):

Name:	CASA GRANDE SITE
Address:	WEST END OF CASA GRANDE ROAD
City,State,Zip:	PETALUMA, CA 94954
Region:	STATE
Facility ID:	49-AA-0009
SWIS Number:	49-AA-0009
Point of Contact:	Bill Hereth
Is Archived:	No
Is Closed Illegal Abandoned:	Yes
Is Site Inert Debris Engineered Fill:	No
Is Financial Assurances Responsible:	Yes
Absorbed On:	Not reported
Operational Status:	Closed
Absorbed By:	Not reported
Closed Illegal Abandoned Category:	C2
EPA Federal Registry ID:	Not reported
ARB District:	Bay Area
SWRCB Region:	San Francisco Bay
Local Government:	Petaluma
Reporting Agency Legal Name:	County of Sonoma
Reporting Agency Department:	Department of Health Services, Environmental Health & Safety Section
Enforcing Agency Legal Name:	County of Sonoma
Enforcing Agency Department:	Department of Health Services, Environmental Health & Safety Section
Regulation Status:	Permitted

Activity:

SWIS Number:	49-AA-0009
Site Name:	Casa Grande Site
Activity:	Solid Waste Disposal Site
Activity Is Archived:	No
Category:	Disposal
Activity Classification:	Solid Waste Disposal Site
WDR Number:	Not reported
WDR Landfill Class:	Not reported
Cease Operation:	1/1/1993
Cease Operation Type:	Actual
Inspection Frequency:	Quarterly
Throughput:	16
Throughput Units:	Cubic Yards per Day
Remaining Capacity:	0
Remaining Capacity Date:	Not reported
Capacity:	0
Capacity Units:	Not reported
Total Acreage:	21
Disposal Acreage:	0
Permitted Elevation:	0
Permitted Elevation Type:	Not reported
Permitted Depth:	0
Permitted Depth Type:	Not reported
Point of Contact:	Bill Hereth
Site Operational Status:	Closed
Site Regulatory Status:	Permitted

CASA GRANDE LANDFILL (Continued) **S100186370**

Site Is Archived:	No
Is Closed Illegal Abandoned:	Yes
Is Site Inert Debris Engineered Fill:	No
Is Financial Assurances Responsible:	Yes
Absorbed On:	Not reported
Absorbed By:	Not reported
Closed Illegal Abandoned Category:	C2
EPA Federal Registry ID:	Not reported
County:	Sonoma
ARB District:	Bay Area
SWRCB Region:	San Francisco Bay
Local Government:	Petaluma
Street Address:	West End Of Casa Grande Road
City:	Petaluma
State:	CA
ZIP Code:	94954
Reporting Agency Legal Name:	County of Sonoma
Reporting Agency Department:	Department of Health Services, Environmental Health & Safety Section
Enforcing Agency Legal Name:	County of Sonoma
Enforcing Agency Department:	Department of Health Services, Environmental Health & Safety Section

Operator:

SWIS Number:	49-AA-0009
Site Name:	Casa Grande Site
Site Operational Status:	Closed
Site Type:	Disposal Only
Site Regulatory Status:	Permitted
Latitude:	38.22944
Longitude:	-122.60861
Is Archived:	No
Operator:	City Of Petaluma Street Dept
Started On:	8/16/1994
Contact Name:	William P. Miller
Contact Title:	Street Superintendent
Contact Email:	Not reported
Contact Phone:	(707) 778-4303
Street Address:	PO Box 61
Operator City:	Petaluma
Operator State:	CA
Operator Zip:	94953

Owner:

SWIS Number:	49-AA-0009
Owner:	City Of Petaluma Street Dept
Owner Address:	PO Box 61
Owner City:	Petaluma
Owner State:	CA
Owner Zip:	94953
Site Name:	Casa Grande Site
Site Operational Status:	Closed
Site Type:	Disposal Only
Site Regulatory Status:	Permitted
Latitude:	38.22944
Longitude:	-122.60861
Is Archived:	No
Started On:	8/16/1994

CASA GRANDE LANDFILL (Continued) **S100186370**

Contact Name:	William P. Miller
Contact Title:	Street Superintendent
Contact Email:	Not reported
Contact Phone:	(707) 778-4303

Waste:

SWIS Number:	49-AA-0009
Site Name:	Casa Grande Site
Activity:	Solid Waste Disposal Site
Waste Type:	Green Materials
Site Is Archived:	No
Site Operational Status:	Closed
Site Regulatory Status:	Permitted
Site Type:	Disposal Only
Point of Contact:	Bill Hereth
Activity Is Archived:	No
Activity Operational Status:	Closed
Activity Regulatory Status:	Permitted
Activity Category:	Disposal
Activity Classification:	Solid Waste Disposal Site

SWIS Number:	49-AA-0009
Site Name:	Casa Grande Site
Activity:	Solid Waste Disposal Site
Waste Type:	Construction/demolition
Site Is Archived:	No
Site Operational Status:	Closed
Site Regulatory Status:	Permitted
Site Type:	Disposal Only
Point of Contact:	Bill Hereth
Activity Is Archived:	No
Activity Operational Status:	Closed
Activity Regulatory Status:	Permitted
Activity Category:	Disposal
Activity Classification:	Solid Waste Disposal Site

CA Financial Assurance 2:

Name:	CASA GRANDE SITE
Address:	WEST END OF CASA GRANDE ROAD
City,State,Zip:	PETALUMA, CA 94954
Region:	2
SWIS_NO:	49-AA-0009
Closure Approved:	Yes
Closure Inf Coverage Date:	Not reported
Closure Plan Coverage:	475522
Closure Plan Date:	10/16/1994
PostClose Approved:	Yes
PostClose Adequacy Date:	06/01/1994
PostClose Inf Coverage:	1215967
PostClose Inf Coverage Date:	06/01/2007
CorActCoverage:	0
CorActApproved:	No
CorAct Mec Adequacy Date:	Not reported
CorAct Inf Coverage:	0
CorActPlanCoverage:	113000

CASA GRANDE LANDFILL (Continued) **S100186370**

CorAct Plan Date:	11/01/2015
Lia Coverage:	0
Lia Approved:	No
Review:	04/20/1995
Closure Mechanism A:	Not reported
Closure Mechanism B:	Not reported
Closure Coverage:	0
Closure Adequacy:	Not reported
Closure Inflation Estimate:	0
Post Closure Mechanism A:	PLEDGE OF REVENUE
Post Closure Established A:	01/09/1995
Post Closure Mechanism B:	Not reported
Post Closure Coverate:	1215967
Post Closure Adequacy:	Not reported
Corrective Action Extablished A:	Not reported
Corrective Actiont Coverage:	0
Corrective Action Approved:	No
Corrective Action Inflation Estimate:	0
Corrective Action Inflationdate:	Not reported
Corrective Action Plan Estimate:	113000
Liability Mechanism A:	Not reported
Liability Established A:	Not reported
Liability Mechanism B:	Not reported
CostAnniversary:	Not reported
ClosureEstablishedA:	Not reported
ClosureEstablishedB:	Not reported
ClosureDisbursement:	0
PostClosureEstablishedB:	Not reported
PostClosureDisbursement:	0
CorrectiveActionMechanismA:	Not reported
CorrectiveActionMechanismB:	Not reported
CorrectiveActionExtablishedB:	Not reported
CorrectiveActiontDisbursement:	0
LiabilityEstablishedB:	Not reported
LiabilityAdequacy:	Not reported
Responsible Party:	Not reported
Provider:	Not reported
Contact:	Not reported

CERS:

Name:	CASA GRANDE SITE
Address:	WEST END OF CASA GRANDE ROAD
City,State,Zip:	PETALUMA, CA 94952
Site ID:	458127
CERS ID:	110013911437
CERS Description:	US EPA Air Emission Inventory System (EIS)

Name:	CASA GRANDE SITE
Address:	WEST END OF CASA GRANDE ROAD
City,State,Zip:	PETALUMA, CA
Site ID:	507555
CERS ID:	49-AA-0009
CERS Description:	Solid Waste and Recycle Sites

Affiliation:

Affiliation Type Desc:	Legal Operator
Entity Name:	City Of Petaluma Street Dept

CASA GRANDE LANDFILL (Continued) **S100186370**

Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Petaluma
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94953
Affiliation Phone:	7077784303
Affiliation Type Desc:	Legal Owner
Entity Name:	City Of Petaluma Street Dept
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Petaluma
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94953
Affiliation Phone:	7077784303

Count: 1 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
PETALUMA	S126984537	SANTA ROSA BIOSOLIDS MGMT. - SOUTH	LAKEVILLE HWY & HWY 37	94954	SWF/LF

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

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

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: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/10/2022
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

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

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: 05/25/2021
Date Data Arrived at EDR: 06/24/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

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: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

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: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
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: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
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: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
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: 07/12/2021
Date Data Arrived at EDR: 08/06/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 77

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/08/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/23/2021
Date Data Arrived at EDR: 08/23/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/18/2021
Next Scheduled EDR Contact: 03/06/2022
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: 08/23/2021
Date Data Arrived at EDR: 08/23/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/19/2021
Next Scheduled EDR Contact: 03/07/2022
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: 06/14/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 61

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/21/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

Lists of state- and tribal (Superfund) equivalent sites

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: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

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: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

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: 08/09/2021
Date Data Arrived at EDR: 08/10/2021
Date Made Active in Reports: 11/05/2021
Number of Days to Update: 87

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/09/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Quarterly

Lists of state and tribal leaking storage tanks

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 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 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 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 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

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

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

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 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

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: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 06/01/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 05/17/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 05/28/2021
Date Data Arrived at EDR: 06/22/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 90
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 04/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 04/06/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)

Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
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

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/29/2021
Date Data Arrived at EDR: 02/17/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 33

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 11/01/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Semi-Annually

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

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: 05/20/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/30/2021
Number of Days to Update: 87

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
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: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
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: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 04/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 04/06/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 06/01/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 05/28/2021
Date Data Arrived at EDR: 06/22/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 90

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 05/17/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

Lists of state and tribal voluntary cleanup sites

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: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

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: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

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: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/17/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 09/13/2021
Number of Days to Update: 88
Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/21/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/10/2021
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 68
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 12/27/2021
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: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 06/04/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 09/14/2021
Date Data Arrived at EDR: 11/11/2021
Date Made Active in Reports: 11/23/2021
Number of Days to Update: 12

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 02/21/2022
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: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

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

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: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
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: 10/28/2021
Next Scheduled EDR Contact: 02/07/2022
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: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
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: 07/22/2021
Date Data Arrived at EDR: 07/22/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 78
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs
A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 01/17/2022
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: 07/15/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
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: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Quarterly

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing

Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 12/01/2019
Date Data Arrived at EDR: 08/19/2021
Date Made Active in Reports: 10/28/2021
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 08/19/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 06/04/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
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: 08/05/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 10/31/2021
Next Scheduled EDR Contact: 02/14/2022
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: 07/15/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
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: 08/25/2021
Date Data Arrived at EDR: 09/03/2021
Date Made Active in Reports: 11/22/2021
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/22/2021
Next Scheduled EDR Contact: 03/13/2022
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/10/2022
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: 08/30/2021
Date Data Arrived at EDR: 08/31/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 80

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
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: 09/12/2021
Date Data Arrived at EDR: 09/13/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 15

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/13/2021
Next Scheduled EDR Contact: 01/03/2022
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: 06/30/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
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: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
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: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
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: 08/10/2021
Date Data Arrived at EDR: 08/17/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 66

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/28/2022
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: 10/15/2021
Next Scheduled EDR Contact: 01/24/2022
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: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
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: 11/08/2021
Next Scheduled EDR Contact: 02/21/2022
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: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
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: 11/01/2021
Next Scheduled EDR Contact: 02/14/2022
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: 11/05/2021
Next Scheduled EDR Contact: 02/14/2022
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: 09/17/2021
Next Scheduled EDR Contact: 12/27/2021
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: 11/16/2021
Next Scheduled EDR Contact: 02/28/2022
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: 07/19/2021
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 85

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/20/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 12/13/2021
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: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
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: 11/05/2021
Next Scheduled EDR Contact: 02/14/2022
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: 11/19/2020
Date Data Arrived at EDR: 01/08/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 73
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/17/2022
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: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
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: 07/29/2021
Date Data Arrived at EDR: 08/24/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 87
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 09/03/2021
Next Scheduled EDR Contact: 12/13/2021
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: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
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: 11/05/2021
Next Scheduled EDR Contact: 02/14/2022
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: 09/27/2021
Next Scheduled EDR Contact: 01/10/2022
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: 10/26/2021
Next Scheduled EDR Contact: 02/07/2022
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: 06/30/2021
Date Data Arrived at EDR: 07/14/2021
Date Made Active in Reports: 07/16/2021
Number of Days to Update: 2

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
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: 09/15/2021
Next Scheduled EDR Contact: 01/03/2022
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: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
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: 07/26/2021
Date Data Arrived at EDR: 07/27/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/01/2021
Next Scheduled EDR Contact: 02/14/2022
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: 11/12/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 01/10/2022
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: 06/30/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 89

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/13/2021
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: 08/09/2021
Date Data Arrived at EDR: 08/24/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 87

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 11/22/2021
Next Scheduled EDR Contact: 03/07/2022
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: 11/22/2021
Next Scheduled EDR Contact: 03/07/2022
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: 11/22/2021
Next Scheduled EDR Contact: 03/07/2022
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: 06/15/2021
Date Data Arrived at EDR: 06/16/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 62

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 12/20/2021
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: 05/05/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 91

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 11/22/2021
Next Scheduled EDR Contact: 12/13/2021
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: 10/07/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 06/26/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
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: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/07/2022
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: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 70

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/17/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 09/14/2021
Number of Days to Update: 89

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/21/2021
Next Scheduled EDR Contact: 01/03/2022
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: 11/19/2021
Next Scheduled EDR Contact: 02/21/2022
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: 08/18/2021
Date Data Arrived at EDR: 08/23/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 81

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 08/24/2021
Date Data Arrived at EDR: 08/25/2021
Date Made Active in Reports: 11/17/2021
Number of Days to Update: 84

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
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: 08/27/2021
Date Data Arrived at EDR: 09/01/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 79

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 78

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/17/2021
Next Scheduled EDR Contact: 12/27/2021
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: 04/16/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/07/2021
Number of Days to Update: 78

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/04/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/14/2021
Date Data Arrived at EDR: 04/15/2021
Date Made Active in Reports: 07/06/2021
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/31/2022
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: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 11/05/2021
Number of Days to Update: 84

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/21/2022
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: 10/08/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 87

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
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: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 87

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
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: 07/01/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
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: 08/05/2021
Date Data Arrived at EDR: 08/31/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 80
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/10/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 07/27/2021
Number of Days to Update: 77
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/09/2021
Next Scheduled EDR Contact: 02/21/2022
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: 08/30/2021
Date Data Arrived at EDR: 08/31/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 80
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/04/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
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: 03/12/2021
Date Data Arrived at EDR: 03/16/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 77
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/27/2021
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: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/25/2021
Number of Days to Update: 83
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
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: 02/11/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 90
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/17/2022
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: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
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: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
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: 06/07/2021
Date Data Arrived at EDR: 06/07/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 81

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
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: 08/30/2021
Date Data Arrived at EDR: 08/31/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 80

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
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: 07/15/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/19/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/24/2021
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
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: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/25/2021
Number of Days to Update: 83
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/07/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Varies

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: 07/13/2021
Date Data Arrived at EDR: 07/14/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 84
Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
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: 11/23/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

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: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
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: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

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: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

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: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/22/2021
Number of Days to Update: 84

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/06/2021
Date Made Active in Reports: 09/17/2021
Number of Days to Update: 42

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
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: 09/30/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 06/15/2021
Date Data Arrived at EDR: 06/16/2021
Date Made Active in Reports: 07/02/2021
Number of Days to Update: 16

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
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: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
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: 07/20/2021
Date Data Arrived at EDR: 07/20/2021
Date Made Active in Reports: 10/11/2021
Number of Days to Update: 83

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 07/23/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 77

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 08/03/2021
Date Made Active in Reports: 10/26/2021
Number of Days to Update: 84

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 04/09/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 09/17/2021
Number of Days to Update: 86

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/12/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 07/13/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
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: 07/06/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 10/07/2021
Number of Days to Update: 56

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/06/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 08/18/2021
Number of Days to Update: 6

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/14/2022
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: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 07/27/2021
Date Data Arrived at EDR: 07/28/2021
Date Made Active in Reports: 10/21/2021
Number of Days to Update: 85

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/06/2021
Next Scheduled EDR Contact: 01/24/2022
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: 11/11/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/08/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/17/2022
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2021
Date Data Arrived at EDR: 02/18/2021
Date Made Active in Reports: 05/10/2021
Number of Days to Update: 81

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 10/05/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 09/24/2021
Next Scheduled EDR Contact: 01/03/2022
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: 02/04/2021
Date Data Arrived at EDR: 04/16/2021
Date Made Active in Reports: 04/21/2021
Number of Days to Update: 5

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 10/08/2021
Next Scheduled EDR Contact: 01/24/2022
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: 04/19/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 06/28/2021
Number of Days to Update: 11

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/24/2021
Next Scheduled EDR Contact: 01/03/2022
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: 04/19/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 09/14/2021
Number of Days to Update: 89

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/24/2021
Next Scheduled EDR Contact: 01/03/2022
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: 05/26/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/24/2022
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: 10/06/2021
Next Scheduled EDR Contact: 01/24/2022
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: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
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: 02/02/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
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: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
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: 09/22/2021
Date Data Arrived at EDR: 11/18/2021
Date Made Active in Reports: 11/22/2021
Number of Days to Update: 4

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/11/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 11/16/2021
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: 06/23/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 06/24/2021
Number of Days to Update: 1

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
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: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
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: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/28/2021
Date Data Arrived at EDR: 07/28/2021
Date Made Active in Reports: 10/21/2021
Number of Days to Update: 85

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 08/03/2021
Date Made Active in Reports: 10/26/2021
Number of Days to Update: 84

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 08/03/2021
Date Made Active in Reports: 10/26/2021
Number of Days to Update: 84

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 07/09/2021
Date Data Arrived at EDR: 07/29/2021
Date Made Active in Reports: 10/19/2021
Number of Days to Update: 82

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
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: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 6

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
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: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
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: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 14
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 14
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
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: 03/30/2021
Date Data Arrived at EDR: 04/01/2021
Date Made Active in Reports: 06/23/2021
Number of Days to Update: 83
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 09/28/2021
Next Scheduled EDR Contact: 01/10/2022
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: 08/02/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 11/02/2021
Number of Days to Update: 90
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/01/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 07/27/2021
Date Data Arrived at EDR: 07/28/2021
Date Made Active in Reports: 10/21/2021
Number of Days to Update: 85
Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 02/14/2022
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: 08/11/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/01/2021
Next Scheduled EDR Contact: 02/14/2022
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: 08/30/2021
Date Data Arrived at EDR: 08/31/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 80

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
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: 11/23/2021
Next Scheduled EDR Contact: 01/31/2022
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: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
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: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/14/2022
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: 11/01/2021
Next Scheduled EDR Contact: 02/14/2022
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: 08/05/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 10/31/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/10/2021
Date Data Arrived at EDR: 08/11/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 89

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
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: 09/10/2021
Next Scheduled EDR Contact: 12/20/2021
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: 08/31/2021
Next Scheduled EDR Contact: 12/20/2021
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: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 08/04/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 11/18/2021
Next Scheduled EDR Contact: 02/27/2022
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: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
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: 11/23/2021
Next Scheduled EDR Contact: 02/14/2022
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: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
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: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
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: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/22/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 09/17/2021
Number of Days to Update: 86

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
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: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/14/2021
Next Scheduled EDR Contact: 01/03/2022
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 05/14/2021
Date Data Arrived at EDR: 05/17/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 78

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 10/06/2021
Next Scheduled EDR Contact: 01/24/2022
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 08/23/2021
Date Data Arrived at EDR: 08/25/2021
Date Made Active in Reports: 11/17/2021
Number of Days to Update: 84

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 04/06/2021
Number of Days to Update: 82

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 07/14/2021
Date Data Arrived at EDR: 07/15/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 83

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 10/15/2021
Next Scheduled EDR Contact: 01/31/2022
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 04/26/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 11/01/2021
Next Scheduled EDR Contact: 02/14/2022
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: 10/14/2021
Next Scheduled EDR Contact: 01/31/2022
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: 05/26/2021
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 81

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
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: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
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: 11/05/2021
Next Scheduled EDR Contact: 02/21/2022
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: 05/26/2021
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 10/07/2021
Number of Days to Update: 80

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/18/2021
Next Scheduled EDR Contact: 01/31/2022
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: 05/26/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/08/2021
Next Scheduled EDR Contact: 12/20/2021
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: 06/22/2021
Date Data Arrived at EDR: 06/28/2021
Date Made Active in Reports: 09/21/2021
Number of Days to Update: 85

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/23/2021
Next Scheduled EDR Contact: 01/10/2022
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 07/20/2021
Date Data Arrived at EDR: 07/20/2021
Date Made Active in Reports: 10/08/2021
Number of Days to Update: 80

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 10/22/2021
Next Scheduled EDR Contact: 02/07/2022
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: 07/23/2021
Date Data Arrived at EDR: 08/10/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 90

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/12/2021
Next Scheduled EDR Contact: 02/21/2022
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: 10/05/2021
Next Scheduled EDR Contact: 01/17/2022
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: 10/29/2021
Next Scheduled EDR Contact: 02/07/2022
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: 10/07/2021
Next Scheduled EDR Contact: 01/24/2022
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: 11/12/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/01/2021
Next Scheduled EDR Contact: 12/20/2021
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

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

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CREEKWOOD
280 CASA GRANDE ROAD
PETALUMA, CA 94954

TARGET PROPERTY COORDINATES

Latitude (North):	38.241214 - 38ˆ 14’ 28.37’’
Longitude (West):	122.596477 - 122ˆ 35’ 47.32’’
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	535312.8
UTM Y (Meters):	4232449.5
Elevation:	46 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	12008171 PETALUMA RIVER, CA
Version Date:	2018
North Map:	12008125 GLEN ELLEN, CA
Version Date:	2018

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).

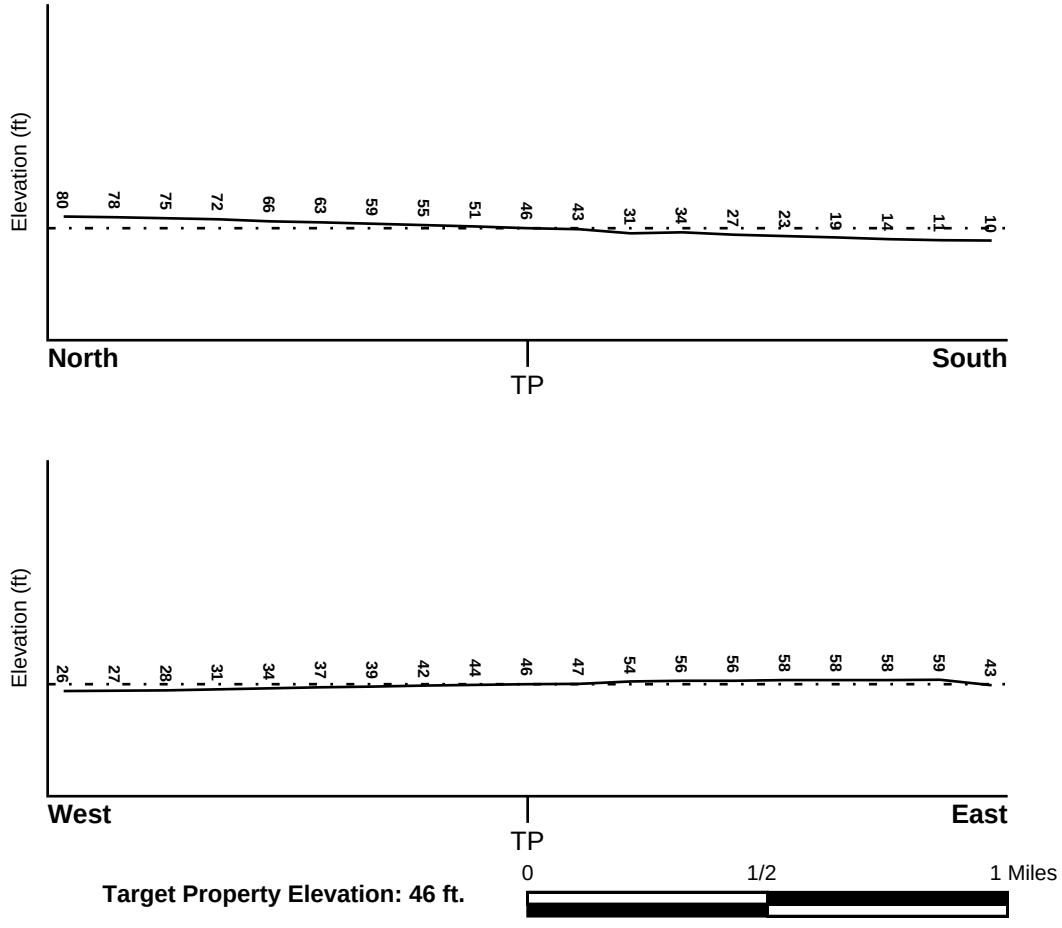
TOPOGRAPHIC INFORMATION

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 SSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 46 ft.

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
06097C1001G	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06097C0915E	FEMA FIRM Flood data
06097C0913F	FEMA FIRM Flood data
06041C0175D	FEMA FIRM Flood data
06097C1002G	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
PETALUMA RIVER	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
A2	1/4 - 1/2 Mile SW	Not Reported
A3	1/4 - 1/2 Mile SW	Not Reported
F15	1/2 - 1 Mile SSW	Varies
F26	1/2 - 1 Mile SW	SSE
G30	1/2 - 1 Mile SE	S

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
G31	1/2 - 1 Mile SE	E
32	1/2 - 1 Mile SW	S
1G	1/4 - 1/2 Mile SW	Not Reported
2G	1/4 - 1/2 Mile SW	Not Reported
3G	1/2 - 1 Mile SSW	Varies
4G	1/2 - 1 Mile SW	SSE
5G	1/2 - 1 Mile SE	S
6G	1/2 - 1 Mile SE	E
7G	1/2 - 1 Mile SW	S

For additional site information, refer to Physical Setting Source Map Findings.

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

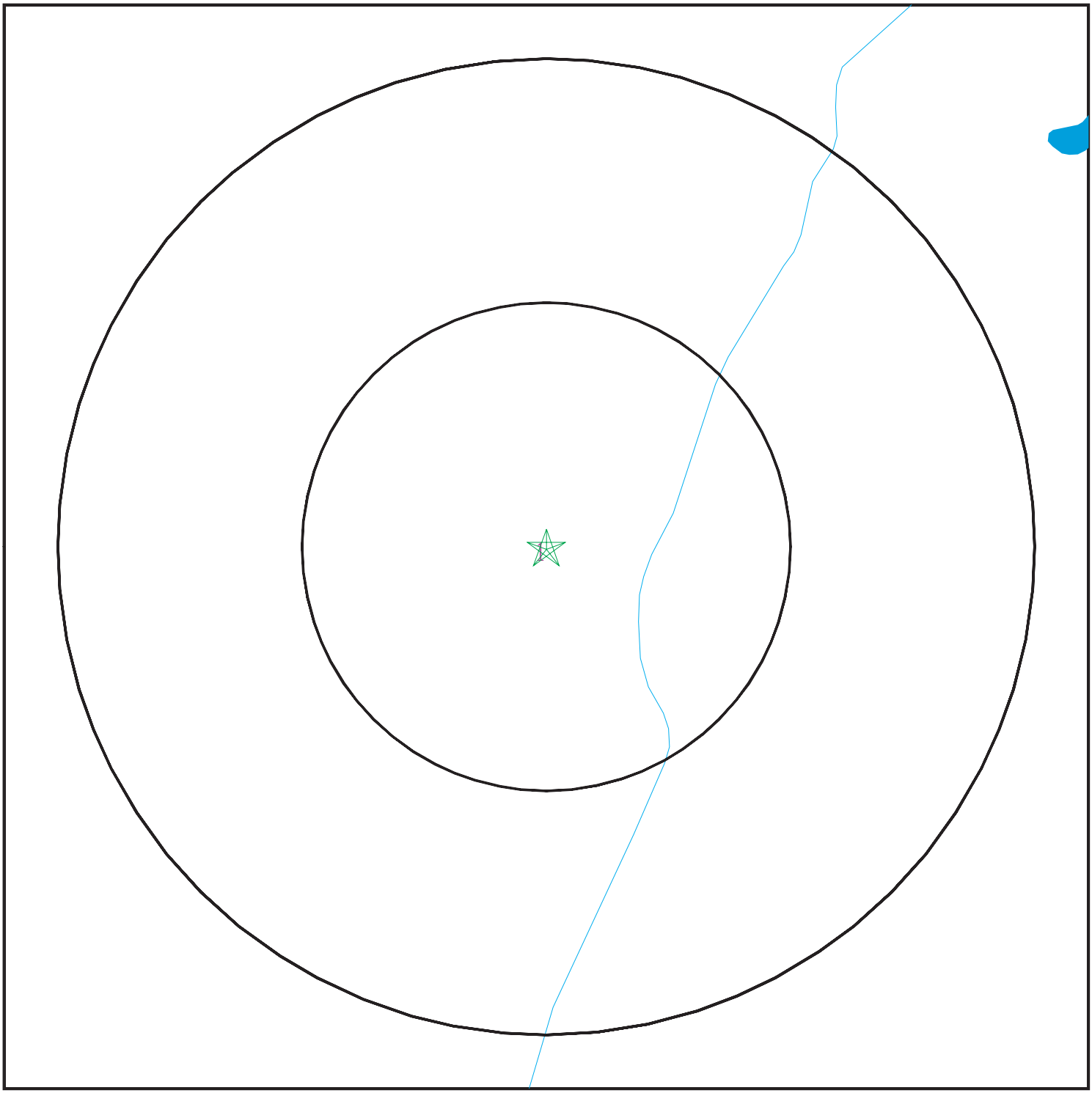
Era:	Cenozoic
System:	Tertiary
Series:	Pliocene
Code:	Tp *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

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 - 6763176.2s



SITE NAME:	Creekwood	CLIENT:	ANALYTICAL ENVIRONMENTAL SERVICES
ADDRESS:	280 Casa Grande Road Petaluma CA 94954	CONTACT:	Kevin Gereghty
LAT/LONG:	38.241214 / 122.596477	INQUIRY #:	6763176.2s
		DATE:	November 24, 2021 2:04 pm

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: CLEAR LAKE

Soil Surface Texture: clay

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: Poorly drained

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	38 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4
2	38 inches	59 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4

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.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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
J54	USGS40000187526	1/2 - 1 Mile NW

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

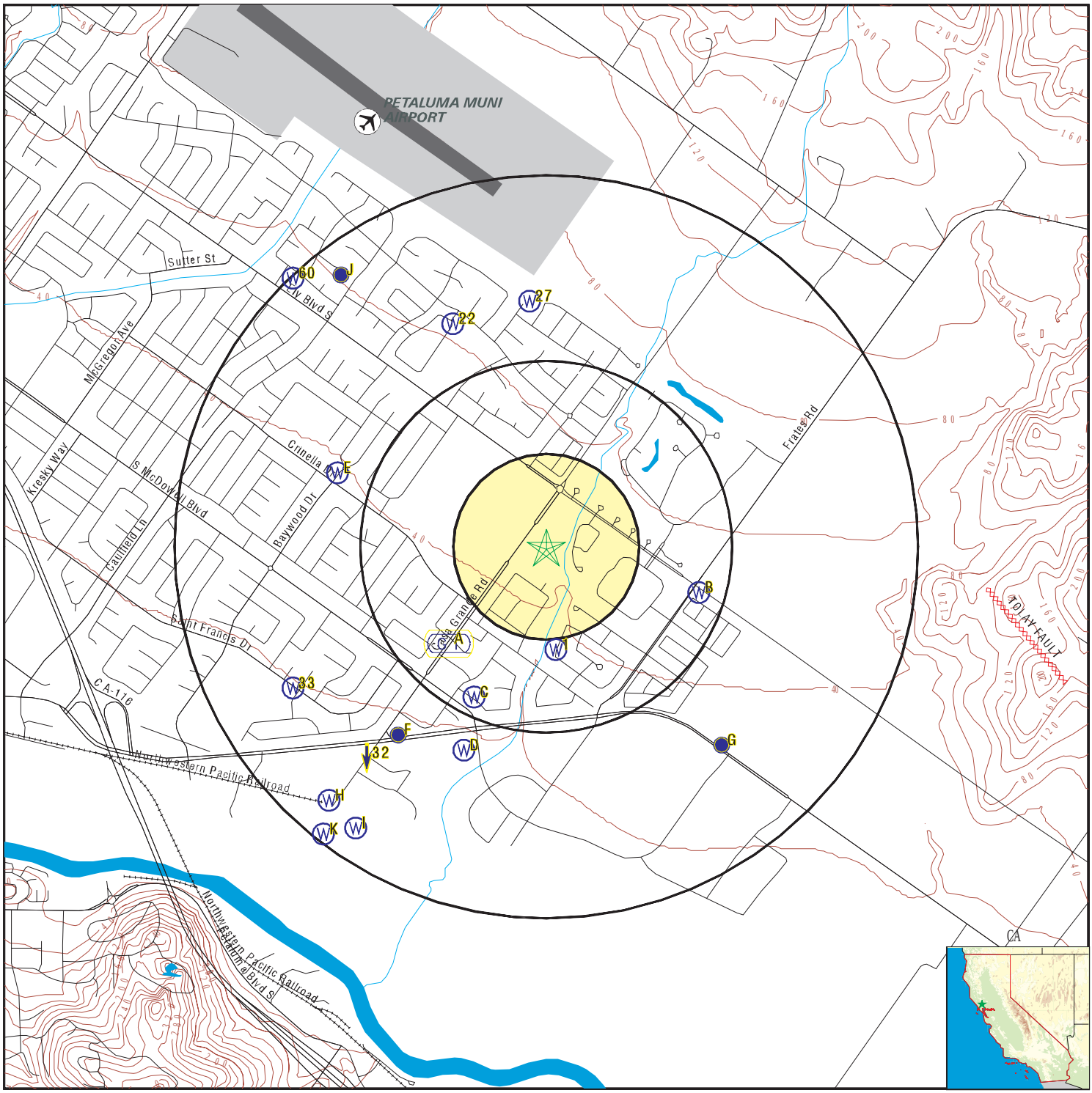
MAP ID	WELL ID	LOCATION FROM TP
1	CADWR0000026425	1/4 - 1/2 Mile South
B4	CALLNL000000576	1/4 - 1/2 Mile ESE
C5	CADDW0000003237	1/4 - 1/2 Mile SSW
B6	CADDW0000014521	1/4 - 1/2 Mile ESE
B7	CAUSGSN00009177	1/4 - 1/2 Mile ESE
B8	CAUSGS000002646	1/4 - 1/2 Mile ESE
C9	5619	1/4 - 1/2 Mile SSW
D10	CADDW0000018389	1/2 - 1 Mile SSW
E11	CADDW0000006816	1/2 - 1 Mile WNW
E12	CAPFAS000001289	1/2 - 1 Mile WNW
D13	5620	1/2 - 1 Mile SSW
F14	CADWR9000038422	1/2 - 1 Mile SW
F16	CAEDF0000088182	1/2 - 1 Mile SW
F17	CAEDF0000033490	1/2 - 1 Mile SW
F18	CAEDF0000134095	1/2 - 1 Mile SW
F19	CAEDF0000060029	1/2 - 1 Mile SW
F20	CAEDF0000077003	1/2 - 1 Mile SW
F21	CAEDF0000122751	1/2 - 1 Mile SW
22	5606	1/2 - 1 Mile NNW
F23	CAEDF0000136859	1/2 - 1 Mile SW
F24	CAEDF0000098267	1/2 - 1 Mile SW
F25	CAEDF0000072575	1/2 - 1 Mile SW
27	CADDW0000003768	1/2 - 1 Mile North
F28	CAEDF0000140402	1/2 - 1 Mile SW
F29	CAEDF0000115523	1/2 - 1 Mile SW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
33	CADWR9000038424	1/2 - 1 Mile WSW
H34	CAEDF0000075676	1/2 - 1 Mile SW
H35	CAEDF0000139179	1/2 - 1 Mile SW
H36	CAEDF0000037157	1/2 - 1 Mile SW
H37	CAEDF0000039459	1/2 - 1 Mile SW
H38	CAEDF0000017996	1/2 - 1 Mile SW
H39	CAEDF0000118170	1/2 - 1 Mile SW
H40	CAEDF0000127697	1/2 - 1 Mile SW
H41	CAEDF0000065606	1/2 - 1 Mile SW
H42	CAEDF0000063431	1/2 - 1 Mile SW
H43	CAEDF0000059809	1/2 - 1 Mile SW
I44	CAEDF0000120740	1/2 - 1 Mile SSW
H45	CAEDF0000119796	1/2 - 1 Mile SW
H46	CAEDF0000092011	1/2 - 1 Mile SW
H47	CAEDF0000012028	1/2 - 1 Mile SW
H48	CAEDF0000066613	1/2 - 1 Mile SW
H49	CAEDF0000108416	1/2 - 1 Mile SW
H50	CAPFAS000000760	1/2 - 1 Mile SW
J51	CAUSGSN00011038	1/2 - 1 Mile NW
H52	CAEDF0000032958	1/2 - 1 Mile SW
I53	CAEDF0000122884	1/2 - 1 Mile SW
H55	CAEDF0000114419	1/2 - 1 Mile SW
I56	CAEDF0000044071	1/2 - 1 Mile SW
K57	CAEDF0000121426	1/2 - 1 Mile SW
K58	CAEDF0000124091	1/2 - 1 Mile SW
K59	CAPFAS000000774	1/2 - 1 Mile SW
60	CADWR0000027633	1/2 - 1 Mile NW

PHYSICAL SETTING SOURCE MAP - 6763176.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Creekwood	CLIENT:	ANALYTICAL ENVIRONMENTAL SERVICES
ADDRESS:	280 Casa Grande Road Petaluma CA 94954	CONTACT:	Kevin Gereghty
LAT/LONG:	38.241214 / 122.596477	INQUIRY #:	6763176.2s
		DATE:	November 24, 2021 2:04 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
South
1/4 - 1/2 Mile
Lower

CA WELLS **CADWR0000026425**

Well ID:	05N07W35H001M	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	05N07W35H001M	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=05N07W35H001M&store_num=		
GeoTracker Data:	Not Reported		

A2
SW
1/4 - 1/2 Mile
Lower

AQUIFLOW **54451**

Site ID:	Not Reported
Groundwater Flow:	Not Reported
Shallow Water Depth:	15
Deep Water Depth:	17
Average Water Depth:	Not Reported
Date:	01/15/1999

A3
SW
1/4 - 1/2 Mile
Lower

AQUIFLOW **54452**

Site ID:	Not Reported
Groundwater Flow:	Not Reported
Shallow Water Depth:	15
Deep Water Depth:	17
Average Water Depth:	Not Reported
Date:	01/15/1999

B4
ESE
1/4 - 1/2 Mile
Higher

CA WELLS **CALLNL000000576**

Well ID:	102184	Well Type:	MUNICIPAL
Source:	Lawrence Livermore National Laboratory		
Other Name:	05N/07W-36D01 M	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	Not Reported		
GeoTracker Data:	Not Reported		

Chemical:	Xenon	Results:	.0000000114607
Units:	cm3STP/g	Date:	12/21/2004
Chemical:	Tritium (Hydrogen 3)	Results:	5.54
Units:	pCi/L	Date:	01/14/2005
Chemical:	Helium-4	Results:	.0000000850093
Units:	cm3STP/g	Date:	12/21/2004
Chemical:	Krypton	Results:	.0000000853514
Units:	cm3STP/g	Date:	12/21/2004
Chemical:	Argon	Results:	.000400714
Units:	cm3STP/g	Date:	12/21/2004

Chemical:	Helium-3/Helium-4	Results:	.00000144691
Units:	atom ratio	Date:	12/21/2004
Chemical:	Neon	Results:	.000000270373
Units:	cm3STP/g	Date:	12/21/2004

C5
SSW **CA WELLS** **CADDW0000003237**
1/4 - 1/2 Mile
Lower

Well ID:	4910006-001	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	CASA ARROYO WELL - INACTIVE		
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=4910006-001&store_num=		
GeoTracker Data:	Not Reported		

B6
ESE **CA WELLS** **CADDW0000014521**
1/4 - 1/2 Mile
Higher

Well ID:	4910006-032	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	FRATES WELL	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=4910006-032&store_num=		
GeoTracker Data:	Not Reported		

B7
ESE **CA WELLS** **CAUSGSN00009177**
1/4 - 1/2 Mile
Higher

Well ID:	USGS-381422122352001	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-381422122352001	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-381422122352001&store_num=		
GeoTracker Data:	Not Reported		

B8
ESE **CA WELLS** **CAUSGS000002646**
1/4 - 1/2 Mile
Higher

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

C9
SSW
1/4 - 1/2 Mile
Lower

CA WELLS **5619**

Seq:	5619	Prim sta c:	05N/07W-35F01 M
Frds no:	4910006001	County:	49
District:	03	User id:	RXR
System no:	4910006	Water type:	G
Source nam:	CASA ARROYO WELL - INACTIVE	Station ty:	WELL/AMBNT/MUN/INTAKE
Latitude:	381407.9	Longitude:	1223558.8
Precision:	2	Status:	IR
Comment 1:	GO W ON HWY 116, TURN RIGHT ONTO FRATES RD. TURN LEFT ONTO SANTONI DR		
Comment 2:	THEN LEFT ONTO BOND AVE. WELL IS ON LEFT SIDE OF RD ACROSS FROM INTERS		
Comment 3:	ECTION OF CASA ARROYO DR.	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	4910006	System nam:	Petaluma, City Of
Hqname:	Not Reported	Address:	PO BOX 61
City:	PETALUMA	State:	CA
Zip:	94953	Zip ext:	Not Reported
Pop serv:	49957	Connection:	16502
Area serve:	PETALUMA		

D10
SSW
1/2 - 1 Mile
Lower

CA WELLS **CADDW0000018389**

Well ID:	4910006-008	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	STATION 05 WELL - DESTROYED		
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=4910006-008&store_num=		
GeoTracker Data:	Not Reported		

E11
WNW
1/2 - 1 Mile
Lower

CA WELLS **CADDW0000006816**

Well ID:	4910006-051	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	LA TERCERA WELL	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=4910006-051&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

E12
WNW
1/2 - 1 Mile
Lower

CA WELLS **CAPFAS000001289**

Well ID:	4910006-051	Well Type:	MUNICIPAL
Source:	Department of Health Services		
Other Name:	LA TERCERA WELL	GAMA PFAS Testing:	Yes
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=4910006-051&store_num=		
GeoTracker Data:	Not Reported		

D13
SSW
1/2 - 1 Mile
Lower

CA WELLS **5620**

Seq:	5620	Prim sta c:	05N/07W-35H01 M
Frds no:	4910006008	County:	49
District:	03	User id:	RXR
System no:	4910006	Water type:	G
Source nam:	STATION 05 WELL - INACTIVE	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	381400.0	Longitude:	1223600.0
Precision:	8	Status:	IR
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	4910006	System nam:	Petaluma, City Of
Hqname:	Not Reported	Address:	PO BOX 61
City:	PETALUMA	State:	CA
Zip:	94953	Zip ext:	Not Reported
Pop serv:	49957	Connection:	16502
Area serve:	PETALUMA		

F14
SW
1/2 - 1 Mile
Lower

CA WELLS **CADWR9000038422**

State Well #:	Not Reported	Station ID:	49243
Well Name:	Casa De Arroyo	Basin Name:	Petaluma Valley
Well Use:	Observation	Well Type:	Single Well
Well Depth:	229	Well Completion Rpt #:	Not Reported

F15
SSW
1/2 - 1 Mile
Lower

AQUIFLOW **54356**

Site ID:	Not Reported
Groundwater Flow:	Varies
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	Not Reported
Date:	04/30/1993

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

F16
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000088182**

Well ID:	T0609700955-RW-10	Well Type:	MONITORING
Source:	EDF	Other Name:	RW-10
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=RW-10&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=RW-10		

F17
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000033490**

Well ID:	T0609700955-MW-4	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-4
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=MW-4&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=MW-4		

F18
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000134095**

Well ID:	T0609700955-MW-8	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-8
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=MW-8&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=MW-8		

F19
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000060029**

Well ID:	T0609700955-MW-5	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-5
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=MW-5&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=MW-5		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

F20
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000077003**

Well ID:	T0609700955-MW-1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=MW-1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=MW-1		

F21
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000122751**

Well ID:	T0609700955-RW-9	Well Type:	MONITORING
Source:	EDF	Other Name:	RW-9
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=RW-9&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=RW-9		

22
NNW
1/2 - 1 Mile
Higher

CA WELLS **5606**

Seq:	5606	Prim sta c:	05N/07W-26R01 M
Frds no:	4910006023	County:	49
District:	03	User id:	RXR
System no:	4910006	Water type:	G
Source nam:	WELL 601 - ABANDONED	Station ty:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Latitude:	381500.0	Longitude:	1223600.0
Precision:	8	Status:	AB
Comment 1:	Not Reported	Comment 2:	Not Reported
Comment 3:	Not Reported	Comment 4:	Not Reported
Comment 5:	Not Reported	Comment 6:	Not Reported
Comment 7:	Not Reported		

System no:	4910006	System nam:	Petaluma, City Of
Hqname:	Not Reported	Address:	PO BOX 61
City:	PETALUMA	State:	CA
Zip:	94953	Zip ext:	Not Reported
Pop serv:	49957	Connection:	16502
Area serve:	PETALUMA		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

F23
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000136859**

Well ID:	T0609700955-MW-3	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=MW-3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=MW-3		

F24
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000098267**

Well ID:	T0609700955-MW-2	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=MW-2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=MW-2		

F25
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000072575**

Well ID:	T0609700955-RW-11	Well Type:	MONITORING
Source:	EDF	Other Name:	RW-11
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=RW-11&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=RW-11		

F26
SW
1/2 - 1 Mile
Lower

AQUIFLOW **54219**

Site ID:	Not Reported
Groundwater Flow:	SSE
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	Not Reported
Date:	01/14/1997

27
North
1/2 - 1 Mile
Higher

CA WELLS **CADDW0000003768**

Well ID:	4910006-031	Well Type:	MUNICIPAL
Source:	Department of Health Services		

Other Name:	CROSS CREEK WELL	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=4910006-031&store_num=		
GeoTracker Data:	Not Reported		

F28
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000140402**

Well ID:	T0609700955-MW-7	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-7
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=MW-7&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=MW-7		

F29
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000115523**

Well ID:	T0609700955-MW-6	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-6
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700955&assigned_name=MW-6&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700955&assigned_name=MW-6		

G30
SE
1/2 - 1 Mile
Lower

AQUIFLOW **54590**

Site ID:	Not Reported
Groundwater Flow:	S
Shallow Water Depth:	4.27
Deep Water Depth:	8
Average Water Depth:	Not Reported
Date:	08/1992

G31
SE
1/2 - 1 Mile
Lower

AQUIFLOW **54354**

Site ID:	Not Reported
Groundwater Flow:	E
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	Not Reported
Date:	08/24/1989

32
SW
1/2 - 1 Mile
Lower

AQUIFLOW **54604**

Site ID:	Not Reported
Groundwater Flow:	S
Shallow Water Depth:	12
Deep Water Depth:	22
Average Water Depth:	Not Reported
Date:	01/16/1991

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

33
WSW
1/2 - 1 Mile
Lower

CA WELLS **CADWR9000038424**

State Well #:	Not Reported	Station ID:	49242
Well Name:	Miwok	Basin Name:	Petaluma Valley
Well Use:	Observation	Well Type:	Single Well
Well Depth:	460	Well Completion Rpt #:	0901156

H34
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000075676**

Well ID:	T0609700924-MW-8
Source:	EDF
GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-8&store_num=
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-8

Well Type:	MONITORING
Other Name:	MW-8

H35
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000139179**

Well ID:	T0609700924-MW-10
Source:	EDF
GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-10&store_num=
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-10

Well Type:	MONITORING
Other Name:	MW-10

H36
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000037157**

Well ID:	T0609700924-MW-11
Source:	EDF
GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-11&store_num=
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-11

Well Type:	MONITORING
Other Name:	MW-11

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

H37
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000039459**

Well ID:	T0609700924-MW-13	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-13
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-13&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-13		

H38
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000017996**

Well ID:	T0609700924-DPE-1	Well Type:	MONITORING
Source:	EDF	Other Name:	DPE-1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=DPE-1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=DPE-1		

H39
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000118170**

Well ID:	T0609700924-MW-6	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-6
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-6&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-6		

H40
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000127697**

Well ID:	T0609700924-MW-12	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-12
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-12&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-12		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

H41
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000065606**

Well ID:	T0609700924-MW-9	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-9
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-9&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-9		

H42
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000063431**

Well ID:	T0609700924-MW-14	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-14
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-14&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-14		

H43
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000059809**

Well ID:	T0609700924-MW-1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-1		

I44
SSW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000120740**

Well ID:	T0609700905-W-10	Well Type:	MONITORING
Source:	EDF	Other Name:	W-10
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700905&assigned_name=W-10&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700905&assigned_name=W-10		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

H45
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000119796**

Well ID:	T0609700924-MW-7	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-7
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-7&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-7		

H46
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000092011**

Well ID:	T0609700924-MW-5	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-5
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-5&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-5		

H47
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000012028**

Well ID:	T0609700924-MW-4	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-4
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-4&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-4		

H48
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000066613**

Well ID:	T0609700905-W-6	Well Type:	MONITORING
Source:	EDF	Other Name:	W-6
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700905&assigned_name=W-6&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700905&assigned_name=W-6		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

H49
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000108416**

Well ID:	T10000000111-BC-3	Well Type:	MONITORING
Source:	EDF	Other Name:	BC-3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T10000000111&assigned_name=BC-3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T10000000111&assigned_name=BC-3		

H50
SW
1/2 - 1 Mile
Lower

CA WELLS **CAPFAS000000760**

Well ID:	T10000000111-BC-3	Well Type:	MONITORING
Source:	EDF	Other Name:	BC-3
GAMA PFAS Testing:	Yes		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T10000000111&assigned_name=BC-3&store_num=		
GeoTracker Data:	Not Reported		

J51
NW
1/2 - 1 Mile
Higher

CA WELLS **CAUSGSN00011038**

Well ID:	USGS-381507122362001	Well Type:	UNK
Source:	United States Geological Survey		
Other Name:	USGS-381507122362001	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-381507122362001&store_num=		
GeoTracker Data:	Not Reported		

H52
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000032958**

Well ID:	T0609700924-MW-3	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-3		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

I53
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000122884**

Well ID:	T0609700905-W-5	Well Type:	MONITORING
Source:	EDF	Other Name:	W-5
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700905&assigned_name=W-5&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700905&assigned_name=W-5		

J54
NW
1/2 - 1 Mile
Higher

FED USGS **USGS40000187526**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	005N007W26E001M	Type:	Well
Description:	Not Reported	HUC:	18050002
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	California Coastal Basin aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	19510101	Well Depth:	605
Well Depth Units:	ft	Well Hole Depth:	605
Well Hole Depth Units:	ft		

H55
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000114419**

Well ID:	T0609700924-MW-2	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700924&assigned_name=MW-2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700924&assigned_name=MW-2		

I56
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000044071**

Well ID:	T0609700905-W-8	Well Type:	MONITORING
Source:	EDF	Other Name:	W-8
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0609700905&assigned_name=W-8&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0609700905&assigned_name=W-8		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

K57
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000121426**

Well ID:	T10000000111-BC-4	Well Type:	MONITORING
Source:	EDF	Other Name:	BC-4
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T10000000111&assigned_name=BC-4&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T10000000111&assigned_name=BC-4		

K58
SW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000124091**

Well ID:	T10000000111-BC-5	Well Type:	MONITORING
Source:	EDF	Other Name:	BC-5
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T10000000111&assigned_name=BC-5&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T10000000111&assigned_name=BC-5		

K59
SW
1/2 - 1 Mile
Lower

CA WELLS **CAPFAS000000774**

Well ID:	T10000000111-BC-5	Well Type:	MONITORING
Source:	EDF	Other Name:	BC-5
GAMA PFAS Testing:	Yes		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T10000000111&assigned_name=BC-5&store_num=		
GeoTracker Data:	Not Reported		

60
NW
1/2 - 1 Mile
Higher

CA WELLS **CADWR0000027633**

Well ID:	05N07W26E001M	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	05N07W26E001M	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=05N07W26E001M&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
1G **SW** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	Not Reported Not Reported 15 17 Not Reported 01/15/1999	**AQUIFLOW**	**54451**
2G **SW** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	Not Reported Not Reported 15 17 Not Reported 01/15/1999	**AQUIFLOW**	**54452**
3G **SSW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	Not Reported Varies Not Reported Not Reported Not Reported 04/30/1993	**AQUIFLOW**	**54356**
4G **SW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	Not Reported SSE Not Reported Not Reported Not Reported 01/14/1997	**AQUIFLOW**	**54219**
5G **SE** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	Not Reported S 4.27 8 Not Reported 08/1992	**AQUIFLOW**	**54590**
6G **SE** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	Not Reported E Not Reported Not Reported Not Reported 08/24/1989	**AQUIFLOW**	**54354**
7G **SW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	Not Reported S 12 22 Not Reported 01/16/1991	**AQUIFLOW**	**54604**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
94954	23	0

Federal EPA Radon Zone for SONOMA County: 3

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 Zip Code: 94954

Number of sites tested: 8

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.275 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

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

APPENDIX F

FEMA MAP

National Flood Hazard Layer FIRMette

FEMA

122°36'8"W 38°14'44"N

122°35'30"W 38°14'16"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/8/2022 at 11:56 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX G

QUESTIONNAIRES

State/Local/Tribal Government Official Interview Form

Interviewee(s):

Date: Feb 24, 2021 Time: 2:10 pm

Name/Title: Olivia Ervin, Environmental Planner Phone Number: 707-778-4566

Email Address: oervin@cityofpetaluma.org

Type of Interview: ____On-site ✓ Off-site/Telephone ____Off-site/Letter or Email

Governmental Agency Description (as applicable):

Agency Office Name: City of Petaluma

Agency Office Address: 499 Humboldt Street Santa Rosa, CA, 95404

Agency Function/Jurisdiction: Other

Planning Department

Interview Results (to the best knowledge of the Interviewee(s)):

Historical Knowledge about Property? ____ 1 Year ____5 Years ✓ 10+ Years

Historical Use of Property? ____Residential ____Industrial ____Commercial

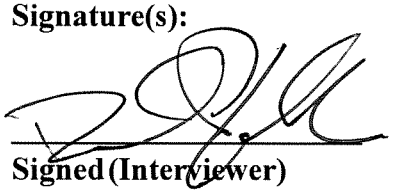
✓ Agricultural ____Rural ____Other

Reason to believe REC present? ____Yes ✓ No ____Require Data

Comment(s):

Past use of the property has been agricultural, further testing related to agricultural practices may be required. See Casa Grande Phase 1 for further information on relevant site contaminants.

Signature(s):



Biologist

February 24, 2021

Signed (Interviewer) **Title** **Date**

User/Owner/Occupant/Key Site Manager Questionnaire

AES is conducting a Phase I Environmental Site Assessment according to American Society for Testing and Materials (ASTM) Standard Practice E1527-13. We request your assistance in conducting this Assessment by asking that you complete this questionnaire and return it as soon as possible.

These questions should be answered by someone or a group of people that are most likely to have knowledge about the subject of the questions – typically the owner, long time tenant, or a property manager. *Please do not leave any blank.* Answer in good faith to the best of your knowledge and if you're not sure how to answer the question, feel free to contact the environmental professional for clarification.

Property Name: Creekwood

Property Address or ID Number (as applicable): 270 and 280 Casa Grande Rd., Petaluma, CA, 94954

General Property Description (location, use, level of development, topography, biota, etc.):
The Subject Property contains agricultural fields and two residences. The topography of the property is relatively flat at 48 ft. asml.

Question	Yes	Not Sure	No	If yes, please describe
1. Did a search of land title records (or judicial records where appropriate – see NOTE below) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law? NOTE — Certain jurisdictions require that environmental liens be filed in judicial records rather than in land title records. In such cases judicial records must be searched for environmental liens.			x	
2. Did a search of recorded land title records (or judicial records where appropriate, see NOTE below) identify any AULs, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law? NOTE — Certain jurisdictions require that activity and use limitation (AULs) be filed in judicial records rather than in land title records. In such cases judicial records must be searched for AULs.			x	
3. Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in			x	

Question	Yes	Not Sure	No	If yes, please describe
the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?				
4. Does the purchase price paid for the property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the lower purchase price is because contamination is known or believed to be present at the property?	x			
5. Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases of hazardous materials?	x			
6. Do you know the past uses on the property? If so, please generally describe the uses and how long have you have had knowledge of the property?	x			Farming and animal grazing. Same use for last 70 years
7. Do you know of specific chemicals that are present or once were present at the property?			x	
8. Do you know of spills or other chemical releases that have taken place at the property?			x	

Question	Yes	Not Sure	No	If yes, please describe
9. Do you know of any environmental cleanups that have taken place at the property?			x	
10. Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of hazardous materials or petroleum product releases at the property?			x	
11. Are there any pits, ponds, or lagoons on the property that have been used in connection with waste disposal or waste treatment?			x	
12. Are there any areas of stained soil or pavement on the property?			x	
13. Are there any areas of stressed vegetation caused by something other than insufficient water on the property?			x	
14. On the property are there any depressions, mounds, or filled/graded areas that are associated with solid waste disposal?			x	

Question	Yes	Not Sure	No	If yes, please describe
15. Are there any liquid discharges into waterways on the property or injections into groundwater on the property?			x	
16. Are there any wells located on the property?	x			Well for house water for 270 Casa Grande
17. Are there any septic systems or cesspools on the property?	x			Septic system for house both addresses have septic system.
18. Do you have or know of the existence of any of the following records related to the property? a) Environmental site assessment reports? b) Environmental compliance audit reports? c) Environmental permits (for example, solid waste disposal permits, hazardous waste			x	

Question	Yes	Not Sure	No	If yes, please describe
disposal permit, wastewater permits, NPDES permits, underground injection permits)? d) Registrations for underground and above-ground storage tanks? e) Registrations for underground injection system? f) Material safety data sheets? g) Community right-to-know plan? h) Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans; facility response plans, etc.? i) Reports regarding hydrogeologic conditions on the property or surrounding area? j) Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property or relating to environmental liens encumbering the property? k) Hazardous waste generator notices or reports? l) Geotechnical studies? m) Risk assessments? n) Recorded Activity and Use Limitations (AULs)?				
19. Do you know of any pending, threatened, or past litigation or administrative proceedings relevant to hazardous substances on the property?			x	
20. Do you know of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances?			x	
21. Do you have any reason to believe contamination is present at the property that was not covered by the above questions?			x	

Question	Yes	Not Sure	No	If yes, please describe

Name: Ron Malnati

Title (if applicable): _____

Association with Property (may check more than one if applicable):

____ User (party seeking to use the Phase I Environmental Site Assessment)

___x_ Owner (owner of Property)

____ Occupant (party occupying *or using* the Property)

____ Key Site Manager (person with good knowledge or uses or physical characteristics of the Property)

Years associated with Property: ____ 1 Year ____ 5 Years __x__ 10+ Years

Completed by: __Ron Malnati_____ Date: __4/6/2022_____

If more than one person assisted in completing this form:

Name: _____

Title (if applicable): _____

Association with Property (may check more than one if applicable):

____ User (party seeking to use the Phase I Environmental Site Assessment)

____ Owner (owner of Property)

____ Occupant (party occupying *or using* the Property)

____ Key Site Manager (person with good knowledge or uses or physical characteristics of the Property)

Years associated with Property: ____ 1 Year ____ 5 Years ____ 10+ Years

Sign Here: _____ Date: 4/7/2022

APPENDIX H

RESUMES

CHARLANE GROSS, RPA

a Montrose Environmental Group company

Education:	M.A., Anthropology, San Jose State University B.A., Anthropology, University of California-Berkeley
Certification:	Registered Professional Archaeologist #11854

Key Qualifications

- 30+ years of management, field, and research experience
- Experience in CEQA, NEPA, and Section 106 and Section 110 of the National Historic Preservation Act

Ms. Gross has over 30 years of management, field, and reserarch experience in the field of archaeology, as well as completing numerous Phase I Environmental Site Assessments over the course of the last 12 years. Ms. Gross has considerable experience in completing hazardous materials background research, field surveys and documentation for Phase I evaluations for CEQA and NEPA documents.

Key Project Experience

- Chickasaw Nation Kingston Development Project Phase I, Marshall County, OK
- Chickasaw Nation Riverwind Fee-to-Trust Project Phase I, McClain County, OK
- Chickasaw Nation Winstar Fee-to-Trust Project Phase I, Love County, OK
- Menominee Phase I, Kenosha County, MI
- Trinidad Rancheria Phase I, Trinidad, CA
- 2300 Fair Oaks Drive Phase I, Sacramento County, CA
- Casa Grande Cultural Study and Phase I, Sonoma County, CA
- Confederated Tribes of the Colville Reservation Cultural Study and Phase I, Franklin County, WA
- Elk Valley Rancheria Environmental Opinion Project Cultural Study and Phase I, Del Norte County,
- Casagranda Development Project Cultural Study and Phase I, Sonoma County, CA
- 2450 Natomas Park Drive Phase I, Sacramento County, CA
- Picayune Rancheria Bible Story Property Cultural Study and Phase I, Madera County,
- Picayune Rancheria Hawkins Valley Property Cultural Study and Phase I, Madera County, CA
- Lytton Rancheria Fee-to-Trust Project, Kidd Creek Property, Cultural Study and Phase I, Sonoma County, CA
- Lytton Rancheria Fee-to-Trust Project, Alexander Valley Property, Cultural Study and Phase I, Sonoma County, CA
- Lytton Rancheria Fee-to-Trust Project, Windsor Properties, Cultural Study and Phase I, Sonoma County, CA
- Lytton Rancheria Fee-to-Trust Project, Starr Road Properties, Cultural Study and Phase I, Sonoma County, CA
- Lytton Rancheria Fee-to-Trust Project, San Pablo Boulevard Cultural Study and Phase I, Contra Costa County, CA
- 2277 Fair Oaks Boulevard Development Project Phase I, Sacramento County, CA
- Buena Vista Rancheria Fee-to-Trust Project, Cultural Study and Phase I, Amador County, CA

DAVID PFUHLER, MS

AES
a Montrose Environmental Group company

Education:	M.S., Lake Management, SUNY College at Oneonta B.S., Environmental Science, SUNY Binghamton University
Certification:	CESSWI, QSP

Key Qualifications

- 5+ years of experience working with government agencies
- Extensive experience with fisheries projects
- Skilled in biological data analysis and statistical modeling

Dave Pfuhler serves as a biologist, writer, and editor on various CEQA and NEPA documents, and provides professional consulting services to public agencies, private clients, and Native American tribes. He is extremely knowledgeable in environmental regulatory processes, specifically hazardous materials, biological resources, transportation and traffic, and noise pollution. He provides consultation and guidance for environmental issues, other regulatory processes, and coordinates with lead agencies, engineers, and sub-consultants in the preparation of documents. He has completed documents that include Environmental Impact Statements and Environmental Assessments as well as permitting and environmental overview tasks that are required for NEPA/CEQA compliance. He has performed fuel hazard reduction planning for PG&E, assessed habitats to produce sustainable BMPs, and conducted Phase 1 ESAs.

Key Project Experience

- 3771 Cleveland Avenue, Sonoma County Phase 1
- Santa Rosa Rancheria, Rancheria Parcels Fee-to-Trust Phase 1
- Santa Rosa Rancheria, Former Dairy Parcels Fee-to-Trust Phase 1
- Santa Rosa Rancheria, Jersey Parcels Fee-to-Trust Phase 1
- Santa Rosa Rancheria, Hanford Parcels Fee-to-Trust Phase 1
- Santa Rosa Rancheria, Lemoore Parcels Fee-to-Trust Phase 1
- Santa Rosa Rancheria, Gilcrease Parcels Fee-to-Trust Phase 1
- Cahto Tribe of the Laytonville Rancheria, Gas Station Phase 1
- 3775 Cleveland Avenue, Sonoma County Phase 1
- Table Mountain Rancheria, Beach Club Fee-to-Trust Phase 1
- Table Mountain Rancheria, Lost Lake Property Fee-to-Trust Phase 1
- Table Mountain Rancheria, Sutherland Property Fee-to-Trust Phase 1
- Table Mountain Rancheria, Brooks Property Fee-to Trust Phase 1
- Tule River Tribe, 40-Acre Airpark Fee-to-Trust Phase 1
- Boyd Gaming, Sacramento County Phase 1
- Casa Grande Housing Development, Petaluma CA Limited Phase 2 Sampling
- Chickasaw Nation, Kingston OK Phase 1

TRENT WILSON

Education:	B.S., Environmental Toxicology, University of California, Davis
Certifications:	CARB Lead Verifier (#H-18-205); CARB Lead Offset Verifier (#H2-19-165)

Key Qualifications

- 20+ years of environmental consulting experience
- Extensive experience preparing environmental documents or federal, state, and local agencies

Mr. Wilson currently serves as the project director/manager and technical lead on numerous CEQA and NEPA projects; Phase I Environmental Site Assessments, hazard mitigation plans including pandemic response plans, and environmental monitoring projects. Areas of expertise include hazardous materials compliance, wastewater and recycled water, air quality analysis, hydrology and water quality, geology and soils, traffic, and noise. Mr. Wilson also has experience developing and performing various types and levels of environmental monitoring projects, including long-term, multi-faceted monitoring projects; performing technical monitoring studies; preparing technical reports; conducting impact analyses; and developing mitigation protocols. Additional areas of expertise include hazardous materials assessment and remediation, environmental chemistry and toxicology, contaminant identification and sample plan preparation, evaluation of analytical results and determination of compliance obligations, and oversight of analytical toxicology studies and preparation of associated compliance reports. As a staff toxicologist, Mr. Wilson works with other project managers, coordinates/consults with jurisdictional agencies (USEPA, Regional Water Quality Control Boards, Department of Toxic Substance Control, Office of Environmental Health Hazard Assessment, as well as numerous counties, cities, and special districts), and legal counsel to ensure environmental monitoring studies, data, and analyses are technically accurate and legally defensible.

Key Project Experience

- 280 Casa Grande Road Phase I ESA, Sonoma County, CA
- 620 and 628 15th Street Phase I ESA, Sacramento County, CA
- 810 North Main Street Phase I ESA, Lake County, CA
- 2277 Fair Oaks Boulevard Phase I ESA, Sacramento County, CA
- 4848 Madison Avenue Phase I ESA, Sacramento County, CA
- 15891 County Road 45 Phase I ESA, Yolo County, CA
- Hayes Property Phase I ESA, Sacramento County, CA
- Lytton Rancheria 1.25-Acres Phase I ESA, Windsor, Sonoma County, CA.
- Lytton Rancheria 2.29-Acres Phase I ESA, Windsor, Sonoma County, CA.
- MJL Properties - 3516 Fair Oaks Boulevard 0.36-acre Phase I ESA, Sacramento County, CA North Fork Rancheria Housing Phase I ESA, Madera County, CA
- Q19 Property Phase I ESA, Sacramento County, CA
- Sacrament Bee Property Phase I ESA, Sacramento County, CA
- Shirland Tract Phase I ESA, Auburn, Placer County, CA

Appendix D

Noise and Vibration Assessment

CREEKWOOD RESIDENTIAL DEVELOPMENT
NOISE AND VIBRATION ASSESSMENT

270-280 Casa Grande Road
Petaluma, California

January 20, 2022
Updated August 15, 2022

♦ ♦ ♦

Prepared for:

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Job No.: 21-192

INTRODUCTION AND SUMMARY

This report presents the results of an environmental noise assessment completed for the proposed 62-unit Creekwood residential condominium development located at 270-280 Casa Grande Road in the City of Petaluma (see Figure 1). The purpose for this noise assessment is to evaluate the compatibility of the development with respect to the environmental noise levels at the project site and evaluate noise impacts upon sensitive receptors in the area. The Setting Section of this report presents the fundamentals of environmental noise and vibration, describes regulatory criteria that are applicable in the project's assessment, and summarizes the results of a survey of the existing noise environment at the project site and vicinity.

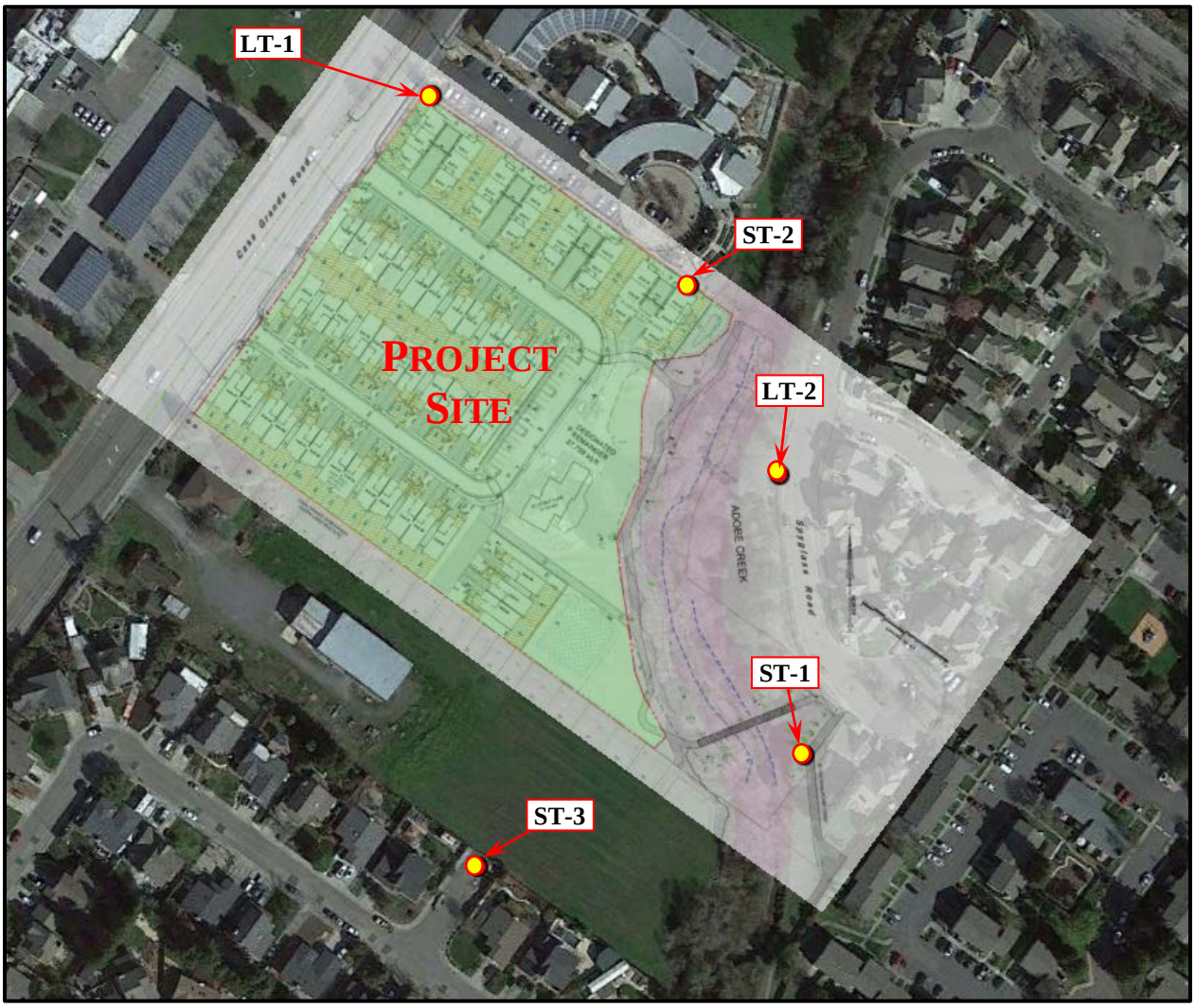


Figure 1: Project Site, Vicinity and Measurement Locations

SETTING

FUNDAMENTALS OF ENVIRONMENTAL NOISE

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its loudness. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception

characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales, which are used to describe noise in a particular location. *A decibel (dB)* is a unit of measurement, which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10-decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level* (*DNL* or L_{dn}) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Effects of Noise

Sleep and Speech Interference. The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noises of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA L_{dn} with open windows and

65-70 dBA L_{dn} if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. To achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need special glass windows.

Table 1: Definitions of Acoustical Terms Used in this Report

Term	Definitions
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro-Pascals (or 20 micro-Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro-Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period. The hourly Leq used for this report is denoted as dBA Leq[h].
Day-Night Level, L_{dn}	The equivalent noise level for a continuous 24-hour period with a 10-decibel penalty imposed during nighttime and morning hours (10:00 pm to 7:00 am).
Community Noise Exposure Level, CNEL	CNEL is the equivalent noise level for a continuous 24-hour period with a 5-decibel penalty imposed in the evening (7:00 pm to 10:00 pm) and a 10-decibel penalty imposed during nighttime and morning hours (10:00 pm to 7:00am)
L_1, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

Annoyance. Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources.

When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 50 dBA L_{dn}. At a L_{dn} of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 25-30 percent of the population. There is, therefore, an increase of about 2 percent per dBA between a L_{dn} of 60-70 dBA. Between a L_{dn} of 70-80 dBA, each additional decibel increases the percentage of the population highly annoyed by about 3 percent. People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 30-35 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 4 percent increase in the percentage of the population highly annoyed.

Table 2: Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	

0 dBA

Source: Technical Noise Supplement (TeNS), Caltrans, November 2009.

FUNDAMENTALS OF GROUNDBORNE VIBRATION

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the Peak Particle Velocity (PPV), and another is the Root Mean Square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. In this section, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous vibration levels produce. The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying.

Table 3: Reaction of People and Damage to Buildings for Continuous Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006 to 0.019	Threshold of perception, Possibility of intrusion	Vibration unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk of "architectural" damage to normal dwellings such as plastered walls or ceilings.
0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations	Vibration at this level would cause "architectural" damage and possibly minor structural damage.

Source: Transportation Related Earthborne Vibrations (Caltrans Experiences), Technical Advisory, Vibration TAV-02-01-R9601, California Department of Transportation, February 20, 2002.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generate the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the peak particle velocity descriptor (PPV) has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life are evaluated against different

vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels such as people in an urban environment may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

REGULATORY BACKGROUND

Noise

The State of California and the City of Petaluma have established regulatory criteria that are applicable in this assessment. The State of California Environmental Quality Act (CEQA) Guidelines, Appendix G, are used to assess the potential significance of impacts pursuant to local General Plan policies, Zoning Code standards, or the applicable standards of other agencies. A summary of the applicable regulatory criteria is provided below.

State CEQA Guidelines. CEQA contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

(a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies,
(b) Generation of excessive groundborne vibration or groundborne noise levels,
(c) For a project located within the vicinity of a private airstrip or an airport land use plan or where such a plan has not been adopted within two miles of a public airport or public use airport, if the project would expose people residing or working in the project area to excessive noise levels.

2019 California Building Code, Title 24, Part 2. The current version of the California Building Code (CBC) requires interior noise levels attributable to exterior environmental noise sources to be limited to a level not exceeding 45 dBA L_{dn}/CNEL in any habitable room.

City of Petaluma General Plan 2025

Section 10.2 of the City of Petaluma's Health and Safety Element includes objectives and policies applicable to the proposed residential project. The City's objective is to, "Protect public health and welfare by eliminating or minimizing the effects of existing noise problems, and by minimizing the increase of noise levels in the future." Single- and Multi-family residential land uses are respectively considered "normally acceptable" up to 60 dBA and 65 dBA L_{dn} or CNEL. Single- and Multi-family residential land uses are both considered "conditionally acceptable" up to 70 dBA L_{dn} or CNEL, "normally unacceptable" between 70 and 75 dBA L_{dn} or CNEL, and "clearly unacceptable" above 75 dBA L_{dn} or CNEL.

The following General Plan policies are applicable to the proposed residential project.

Policy A: Continue efforts to incorporate noise considerations into land use planning decisions and guide the locations and design of transportation facilities to minimize the effects of noise on adjacent land uses.

Policy B: Discourage location of new noise-sensitive uses, primarily homes, in areas with projected noise levels greater than 65 dBA CNEL. Where such uses are permitted, require incorporation of mitigation measures to ensure that interior noise levels do not exceed 45 dB CNEL.

Policy C: Ensure that the City's Noise Ordinance and other regulations:

- Require that applicants for new noise-sensitive development in areas subject to noise levels greater than 65 dB CNEL obtain the services of a professional acoustical engineer to provide a technical analysis and design of mitigation measures.
- Require placement of fixed equipment, such as air conditioning units and condensers, inside or in the walls of new buildings or on rooftops of central units to reduce noise impacts on any nearby sensitive receptors.

Policy D: Continue to require control of noise or mitigation measures for any noise-emitting construction equipment or activity. The City's Noise Ordinance establishes controls on construction-related noise.

Policy E: As part of development review, use Figure 10-2: Land Use Compatibility Standards to determine acceptable uses and installation requirements in noise-impacted areas.

Policy F: Discourage the use of sound walls anywhere except along Highway 101 and/or along the NWPRA corridor without findings that such walls will not be detrimental to community character. When sound walls are deemed necessary, integrate them into the streetscape.

Policy G: In making a determination of impact under the California Environmental Quality Act (CEQA) consider an increase of four or more dBA to be "significant" if the resulting noise level would exceed that described as normally acceptable for the affected use in Figure 10-3: Land Use Compatibility for Community Noise Environments.

City of Petaluma Implementing Zoning Ordinance. Section 21.040 A of the City of Petaluma Implementing Zoning Ordinance contains the following regulations which are generally applicable to operational (non-traffic) related noise in the City:

3. **Noise Regulations Generally.**

a. The following specific acts, subject to the exemptions provided in Section 21.040(A)(5), are declared to be public nuisances and are prohibited:

1) The operation or use of any of the following before 7:00 a.m. or after 10:00 p.m. daily (except Saturday, Sunday and State, Federal or Local Holidays, when the prohibited time shall be before 9:00 a.m. and after 10:00 p.m.):

2) A hammer or any other device or implement used to repeatedly pound or strike an object.

3) An impact wrench, or other tool or equipment powered by compressed air.

4) Any tool or piece of equipment powered by an internal-combustion engine such as, but not limited to, chain saw, backpack blower, and lawn mower. Except as specifically included in this Ordinance, motor vehicles, powered by an internal combustion engine and subject to the State of California vehicle code, are excluded from this prohibition.

5) Any electrically or battery powered tool or piece of equipment used for cutting, drilling, or shaping wood, plastic, metal, or other materials or objects, such as but not limited to a saw, drill, lathe or router.

6) Any of the following: the operation and/or loading or unloading of heavy equipment (such as but not limited to bulldozer, road grader, back hoe), ground drilling and boring equipment, hydraulic crane and boom equipment, portable power generator or pump, pavement equipment (such as but not limited to pneumatic hammer, pavement breaker, tamper, compacting equipment), pile-driving equipment, vibrating roller, sand blaster, gunite machine, trencher, concrete truck, and hot kettle pump and the like.

7) Construction, demolition, excavation, erection, alteration or repair activity.

8) Operating or permitting the operation of powered model vehicles including but not limited to cars, aircraft and boats.

9) Using or operating for any purpose any loudspeaker, loudspeaker system or similar device in such a manner as to create a noise disturbance. Any permit issued pursuant to PMC Section 13.28.050 (amplified sound permit within a public park) is exempt from this section.

10) The use of truck/tractor trailer "Jake Brakes" on any public street under the jurisdiction of the City of Petaluma Police Department.

b. In the case of urgent necessity and in the interest of public health and safety, the Noise Control Officer may issue a permit for exemption from the requirements with subsection 21.040(A)(3). Such period shall not exceed ten (10) working days in length but may be renewed for successive periods of thirty (30) days or less, not to exceed a total of 90 days while the emergency continues. Requests for exemptions beyond 90 days shall require public hearing approval. The Noise Control Officer may limit such permit as to time of use and/or permitted action, depending upon the nature of the emergency and the type of action requested.

c. The operation of any licensed motor vehicle in violation of the State Vehicle Code or the operation of stereo, public address or other such amplified equipment on or within a motor vehicle in violation of the State Vehicle Code.

d. Continued or repeated operation of a Public Address System between the hours of 10:00 a.m. and 7:00 p.m. daily shall not exceed a decibel level of 5 dBA above the measured ambient of the area in which this activity is occurring. Unless specifically approved by the City of Petaluma (i.e., Use Permit, Parks Director, Exception or Exemption from this Code Sec.) no Public Address System shall be permitted during the hours of 7:00 p.m. to 10:00 a.m.

4. **Noise Measurement**: Utilizing the "A" weighting scale of a sound level meter and the "slow" meter response (use "fast" response for impulsive type sounds), the ambient noise level shall first be measured at a position or positions at any point on the receptor's property which can include private and public property. In general, the microphone shall be located four to five feet above the ground; ten feet or more from the nearest reflective surface where possible. If possible, the ambient noise shall be measured with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the noise from the source is at least 10dB below the ambient in order that only the ambient level will be measured.

a. If the measured ambient level is greater than 60dB, the Maximum Noise Exposure standard shall be adjusted in 5dB increments for each time period as appropriate to encompass or reflect the measured ambient noise level. In no case shall the maximum allowed threshold exceed 75dB after adjustments are made.

b. In the event the measured ambient noise level is 70dB or greater, the maximum allowable noise level shall be increased to reflect the maximum ambient noise level. In this case, adjustments for loudness and time as contained in Table 21.1 shall not be permitted.

c. No person shall cause or allow to cause, any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which when measured on the property where the noise disturbance is being experienced within public or private open/outdoor spaces, exceeds the noise level of Table 21.1.

TABLE 21.1: Maximum Exterior Noise Exposure (dBA)

Category Description	Noise Metric[1]	Nighttime Hours (10:00 pm to 7:00 am M-F, 10:00 pm to 8:00 am S, S and Holidays)	Daytime Hours (7:00 am to 10:00 pm M-F, 8:00 am to 10:00 pm S, S and Holidays)
General Plan Ambient	L_{eq}	60 dBA	60 dBA
Cumulative period of 15 min. or more in one hour	L_{25}	65 dBA	70 dBA
Cumulative period of 5 min. or more in one hour	L_{08}	70 dBA	75 dBA
Cumulative period of 1 min. or more in one hour	L_{02}	75 dBA	80 dBA

Note 1: The noise metric column was added by Illingworth& Rodkin, Inc. to provide a measurable hourly noise level to compare with the Table 21.1 noise categories. These levels equate to the sound level exceeded n% of the time in any hour. For example, the L_{25} is the value exceeded 25% of the time or 15 minutes in any hour. These levels, which are used to evaluate noise events which occur during a given daytime or nighttime hour, differ from the CNEL metric used for the General Plan Noise and Land Use Compatibility standards, which is used to evaluate noise events over a 24-hour period.

EXISTING NOISE ENVIRONMENT

The proposed project is located 270-280 Casa Grande Road on the opposite side of this roadway from Casa Grande High School. The project site is bordered by a Senior Housing Facility to the north, Casa Grande creek and single-family residences beyond to the east, existing and future single-family residences to the south, and Casa Grande Road with Casa Grande High School beyond to the west. Other area uses are also residential or educational. The existing noise environment at the project site results primarily from vehicular traffic on Casa Grande Road. Other sources of noise in the area include residential and educational uses, seasonal sounds from water flows in Casa Grande Creek and the associated riparian habitat, and overhead noise from general aviation aircraft using the Petaluma Airport.

Noise monitoring surveys were conducted on the site and surrounding areas between 10 am on Tuesday January 4th, 2022, and 10 am on Friday January 7th, 2022, to quantify the existing noise environment on the project site. The noise monitoring survey included two long-term noise measurements as indicated as LT-1 and LT-2 in Figure 1 and three short term measurements indicated as ST-1, ST-2, and ST-3 in Figure 1. The noise measurements were conducted with Larson Davis Laboratories (LDL) Type I Model LXT Sound Level Meters. All meters were equipped with ½-inch pre-polarized condenser microphones and windscreens and were calibrated with a Larson Davis Model CA250 precision acoustic calibrator prior to and following the measurement survey.

Long-term noise measurement, LT-1, was located on the northern property line on the trunk of a tree at a height of 12 feet above grade and approximately 65 feet from the centerline of Casa Grande Road (see Figure 1). The measured noise levels at this location, including the energy equivalent noise level (L_{eq}), maximum (L_{max}), minimum (L_{min}), and the noise levels exceeded 10, 50 and 90 percent of the time (indicated as L_{10}, L_{50} and L_{90}) are shown on Chart 1, following.

A review of Chart 1 indicates that the noise levels at site LT-1 followed a diurnal pattern characteristic of traffic noise, with the average daytime noise levels ranging from 62 to 78 dBA

L_{eq} and the average hourly nighttime noise levels ranging from 51 to 66 dBA L_{eq}. The overall Community Noise Equivalent Level (CNEL) for the 72-hour monitoring period at position LT-1 was 69 dBA, with the full day (Wednesday 1/5/22 and Thursday 1/6/22) CNELs at 68 dBA and 69 dBA, respectively.

Long-term noise measurement LT-2 was in the single-family neighborhood west of the project site on the light pole at a height of 12 feet above grade across the street from the residence at 1702 Silverado Circle (see Figure 1). The measured noise levels at this location, including the energy equivalent noise level (L_{eq}), maximum (L_{max}), minimum (L_{min}), and the noise levels exceeded 10, 50 and 90 percent of the time (indicated as L_{10}, L_{50} and L_{90}) are shown on Chart 2, following.

A review of Chart 2 indicates that the noise levels at site LT-1 followed a less distinct, but still diurnal pattern characteristic of traffic noise, with the average daytime noise levels ranging from 44 to 65 dBA L_{eq} and the average hourly nighttime noise levels ranging from 35 to 47 dBA L_{eq}. The overall Community Noise Equivalent Level (CNEL) for the 72-hour monitoring period at position LT-1 was 54 dBA, with the full day (Wednesday 1/5/22 and Thursday 1/6/22) CNELs at 53 dBA and 54 dBA, respectively.

Two short-term (10-minute duration) noise measurements (ST-1 and ST-2) were made on the site at a height of 5 feet above grade simultaneously the long-term noise monitors between 10:00 and 10:30 a.m. on Tuesday, January 4th, 2022, and one short-term (10-minute duration) noise measurements (ST-3) was made on the site at a height of 5 feet above grade simultaneously the long-term noise monitors between 9:30 and 9:40 a.m. on Friday, January 7th, 2022. These measurements were used to determine the relative attenuation of Casa Grande Road traffic noise across the site and document other area noise sources.

The first short term measurement on the project site (see ST-1 on Figure 1) was made on the bike path adjacent to Casa Grande Creek and the home at 1702 Silverado Circle. Sound levels measured at this location included water flow sounds in the creek, barking dogs, birds in the surrounding trees and distant traffic.

The second short term (see ST-2 on Figure 1) was made at the end of Del Rancho Way in the existing residential neighborhood south of the project site. Sound levels measured at this location included distant leaf blower noise, birds in the surrounding trees and distant traffic.

The third short term (see ST-3 on Figure 1) was made at the rear of the parking lot of the senior apartments north of the project site. Sound levels measured at this location included primarily included noise from distant traffic, with occasional sound from birds and distant airplanes.

The results of the measurements at the short-term positions are shown in Table 6. The CNEL levels assigned to these measurement locations are approximated by correlating the measured Leq levels at the short-term positions with those measured simultaneously at the long-term positions.

Table 6: Summary of Short-Term Noise Measurement Data, dBA

Noise Measurement Location	L_{max}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	L_{eq}	CNEL
ST-1: Bike path adjacent to Casa Grande Creek	58	52	49	48	47	48	**47**[1]
ST-2: End of Del Rancho Way	59	52	47	44	42	45	**45**[1]
LT-2: Senior Apartment Parking Lot	57	56	53	50	46	50	**50**[1]

[1] The CNEL at ST-1, ST-2 and ST-3 are estimated by correlation to the corresponding measurements at LT-1& LT-2

Chart 1: Measured Noise Levels at LT-1

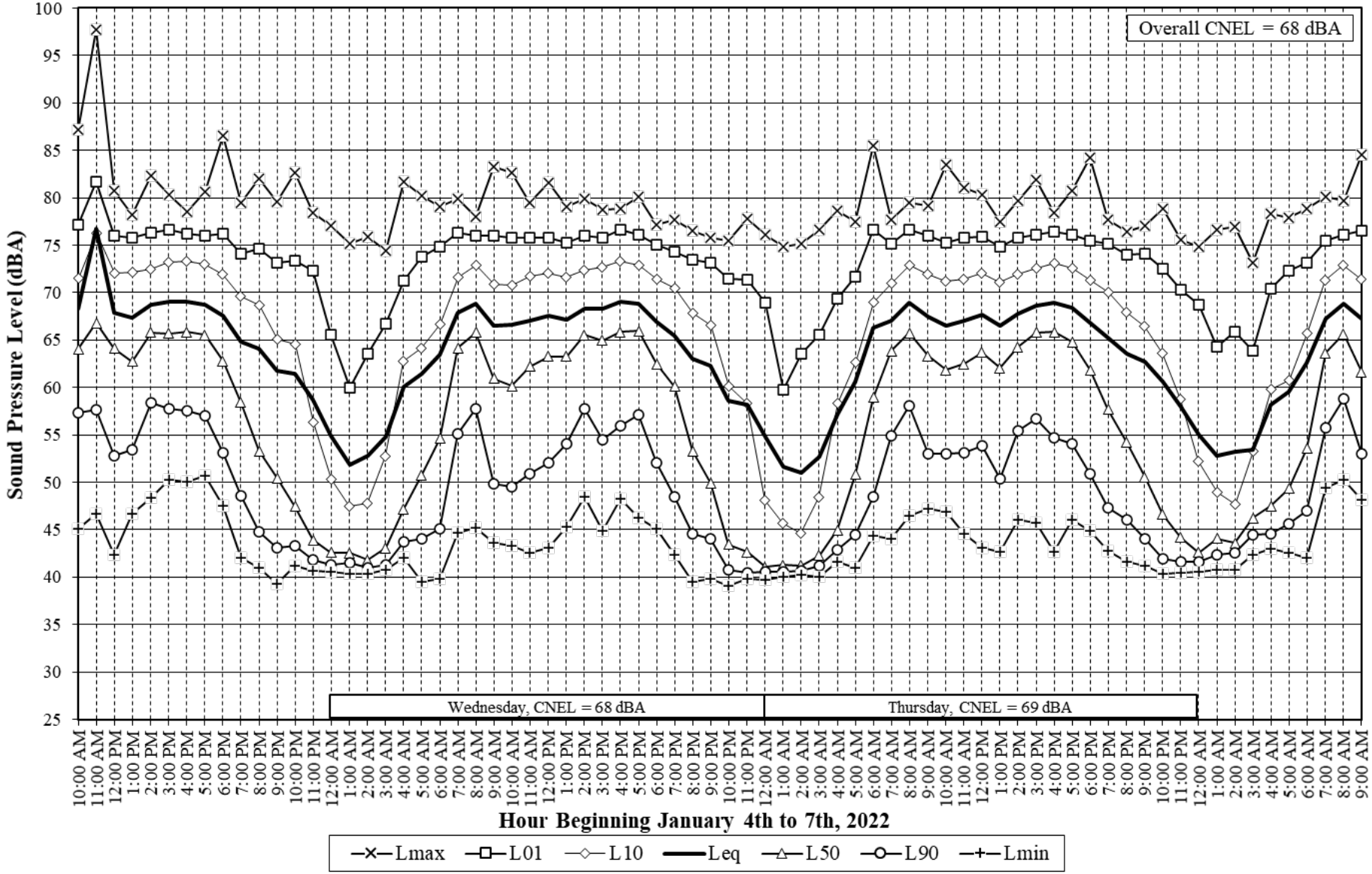
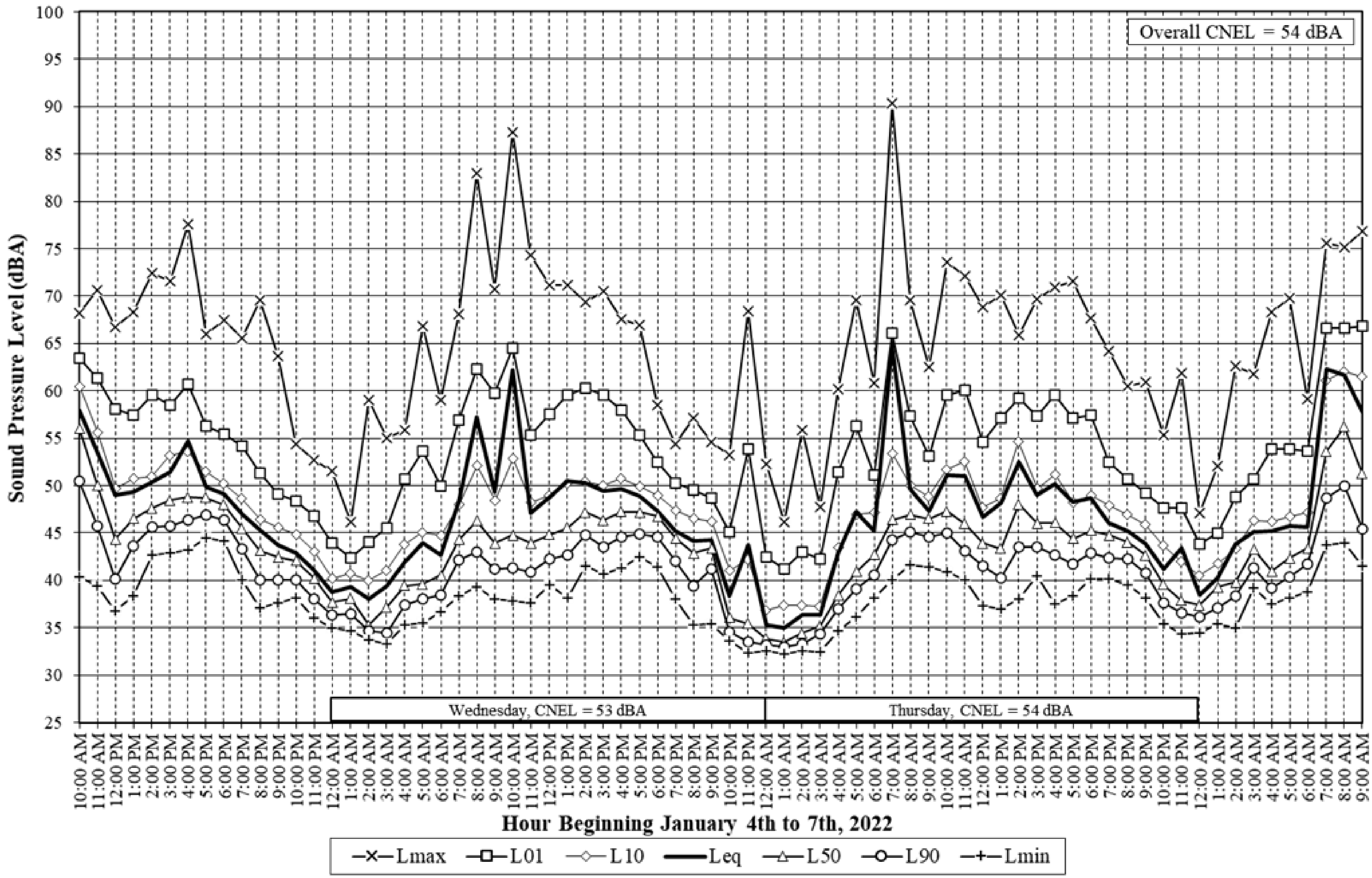


Chart : Measured Noise Levels at LT-2



FUTURE NOISE ENVIRONMENT

The future noise environment on the roadway frontages would continue to result from traffic along the adjacent roadways. To assess the future noise environment, we have assumed that future traffic volumes on Casa Grande Road. would increase by about 1-2% per year as a result of general growth throughout the city. Based on this traffic volume estimate, the future noise environment would be approximately 1 decibel higher than existing noise levels. Thus, exterior noise levels due to roadway traffic under future conditions would be 69 dBA CNEL at the residential facades closest to Casa Grande Road.

SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers over a permanent or temporary basis. A significant impact would be identified for a proposed land use if it would be exposed to noise levels exceeding established guidelines or standards for noise and land use compatibility. A substantial permanent noise increase would occur if the noise level increase resulting from the project is 4 dBA CNEL as established by the Petaluma General Plan. A substantial temporary noise level increase would occur where noise from construction activities exceeds 60 dBA L_{eq} and the ambient noise environment by at least 5 dBA L_{eq} at adjacent land uses in the project vicinity for a period of one year or more. Vibration levels generated during demolition or construction activities would be significant if they cause cosmetic or structural damage to adjacent buildings.

NOISE IMPACTS AND MITIGATION MEASURES

Impact 1a: **Exterior Residential Noise and Land Use Compatibility.** Residential uses developed at portions of the project site would be exposed to normally and conditionally acceptable noise levels. **This is a potentially significant impact.**

The proposed project is a 62-unit condominium development will include 3 detached, 16 duets and 8 triplex residential units. A review of the project site plan and project description indicates that each of the residences will have fenced private outdoor open spaces to the rear and side of the residences and no project-wide common outdoor use areas.

A review of the project site plan indicates that the front side and rear yard areas of the residences directly adjacent to and/or perpendicular to Casa Grande Road will be exposed to CNEL levels of up to 69 dBA under future conditions, with these areas being considered “conditionally acceptable” for residential use by the City’s General Plan noise standards.

Though the private outdoor use areas of these residences are not considered unacceptable by City standards, to reduce noise levels in these private outdoor use areas we recommend the following mitigation measure be incorporated in the project design:

Mitigation Measure 1a: Exterior Noise Reduction at Private Yards

To reduce noise levels noise levels in the yards of the homes adjacent to Casa Grande Road to a CNEL of 60 dBA, noise barriers with a minimum top of wall elevation of seven (7) feet above grade level of the single-family home rear yards along Casa Grande Road should be built on property lines adjacent to the roadway as shown in Figure 2. Additionally, the private outdoor use areas for the triplex multifamily homes adjacent to Casa Grande Road adjacent to Casa Grande Road, they should also be enclosed to the greatest degree feasible by a barrier with a

minimum top of wall elevation of seven (7) feet above grade. Example locations of these barriers are also shown in Figure 2.

To be effective as a barrier to noise, the noise barrier walls should be built without cracks or gaps in the face or large or continuous gaps at the base or where they adjoin the homes or each other. The walls should also have a minimum surface weight of 3.0 lbs. per sq. ft. Small, dispersed, gaps in the base of the walls for landscape irrigation or drainage which do not compose more than 0.5% of the wall area are acceptable.

Figure 2: Site Plan with Noise Barrier Locations

Impact 1b: **Interior Residential Noise and Land Use Compatibility.** The interiors of residences adjacent to Casa Grande Road would be exposed to "conditionally acceptable" noise levels may be exposed to interior noise levels exceeding the City required 45 dBA CNEL. **This is a potentially significant impact.**

Residential units on the project site adjacent to or with a clear view of Casa Grande Road will be exposed to exterior noise levels of up to 69 dBA CNEL under future conditions. The City of Petaluma requires that interior noise levels within new residential units not exceed 45 dBA CNEL. In buildings of typical construction, with the windows partially open, interior noise levels are approximately 15 dBA lower than exterior noise levels. With the windows closed, standard residential construction typically provides 20 to 25 decibels of exterior to interior noise reduction. Considering this, where exterior day-night average noise levels are 65 dBA CNEL or less, interior noise levels can typically be maintained below City standards (45 dBA CNEL) with the incorporation of forced air mechanical ventilation systems in residential units. These systems allow the occupant the option of controlling noise by maintaining the windows shut. Where noise levels exceed 65 dBA CNEL, forced-air mechanical ventilation systems and sound-rated building elements are normally required.

Mitigation 1b.1: Average (CNEL) Interior Noise

a. To achieve the necessary noise reduction required to meet the requirements of the City General Plan standards, some form of forced air mechanical ventilation, satisfactory to the local building official, would be required in all residences with partial or full line of sight to Casa Grande Road traffic.
b. Given the anticipated exterior noise levels along Casa Grande Road, it may also be necessary to provide sound-rated windows and doors at upper floor residences facing or perpendicular to Casa Grande Road to maintain interior noise levels at or below 45 dBA CNEL. The degree of sound mitigation needed to achieve an interior CNEL of 45 dBA or less would vary depending on the final design of the building (relative window area to wall area) and the design of the exterior wall assemblies. However, based on the future exterior noise levels and typical residential construction, we would expect that windows and doors facing or with a view of Casa Grande Road may require STC ratings of between 28 and 30.
c. The specific determination of exterior wall assemblies and window/door STC ratings should be conducted on a unit-by-unit basis during the project design. The results of the analysis, including the description of the necessary noise control treatments, shall be submitted to the City along with the building plans and approved prior to issuance of a building permit.

Impact 2: **Project Operational Noise Generation** Noise due to the use and occupation of the project residences on adjacent noise sensitive uses is not expected to significantly increase or alter the existing noise environment at these uses. **This is a less-than-significant impact.**

The proposed project would place new residential uses adjacent to the existing senior housing development to the north and the future residential development to the south, and approximately 240 feet from the existing residential uses to the south, and over 300 feet from the classroom buildings across Casa Grande Road. The occupation and use of the proposed homes is expected to result in the typical noises associated with residential development, including voices of the new residents, home maintenance activities, barking dogs and children. The Heating Ventilation and Air Conditioning (HVAC) and other mechanical equipment associated with the multifamily residential development will also add noise the existing environment. Based on noise measurements made at similar projects the outdoor condensing units at the proposed residences may produce constant sound levels of 47 to 50 dBA L_{eq} at 50 feet and could operate continuously

during both daytime and nighttime hours. Considering these noise levels and distances to the adjacent residential uses it is clear that noise from the project HVAC equipment would be well below the Noise Ordinance (General Plan Ambient) limit of 60 dBA L_{eq} at the closest adjacent residences. Additionally, though noise resulting from occupation of the new residences may noticeably change the noise environment in some adjacent residential areas, these sources are not expected to increase noise levels in any surrounding areas by four or more dBA and the noise associated with the proposed residences is not incompatible with the surrounding land uses. Therefore, project operation is not judged to result in a noise impact.

Mitigation 2: None Needed

Impact 3: **Project-Generated Traffic Noise.** The proposed project would not substantially increase noise levels on a permanent basis at noise sensitive uses in the vicinity. **This is a less-than-significant impact.**

A significant impact would be identified if traffic generated by the project would substantially increase noise levels at sensitive receivers in the vicinity. A substantial increase would occur if the project traffic on area roadways where to result in a noise level increase of 4 dBA CNEL or greater. The traffic report for the development indicated that the project would generate an average of 522 trips per day, including 38 trips during the a.m. peak hour and 49 during the p.m. peak hour. Though the existing traffic volumes on Casa Grande Road were not given in this report, to cause a 4 dBA increase in noise along area roadway, the project would have to generate enough traffic to more than double current roadway volumes. Based on traffic volumes observed during the site noise surveys it is not considered possible for the number of traffic trips generated by the project to double current roadway volumes.

Mitigation 3: None Required.

Impact 4a: **Exposure to Construction Generated Groundborne Vibration.** Residences in the vicinity of the project site are not expected to be exposed to perceptible vibration levels from construction activities. **This is a less-than-significant impact.**

Construction activities would include site preparation work such as grading and the installation of utilities, foundation work, and new building framing. Construction techniques that generate the highest vibration levels, such as impact or vibratory pile driving, are not expected at this project. Construction activities would generally occur at distances of 200 feet or more from the nearest residential units, but activities near the northern project perimeter could occur at distances of as close as 60 feet from existing senior residential units and activities near the southern project perimeter could occur at distances of as close as 40 feet from the single-family homes currently under construction to the south.

For structural damage, the California Department of Transportation uses a vibration limit of 0.5 in/sec, PPV for buildings structurally sound and designed to modern engineering standards and 0.2 in/sec, PPV for buildings that are found to be structurally sound but where structural damage is a major concern.

Project construction activities such as drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate substantial vibration in the immediate vicinity. Building framing, exterior and interior finishing, and landscaping activities are not anticipated to be sources of substantial vibration. Construction activities may extend over several construction seasons, but construction

vibration would not be substantial for most of this time except during vibration generating activities (as discussed above).

Table 7 presents vibration source levels for typical construction equipment at distances of 40 and 60 feet. Jackhammers typically generate vibration levels of 0.017 to 0.009 in/sec PPV, drilling typically generates vibration levels of 0.044 to 0.024 in/sec PPV, and vibratory rollers generate vibration levels of 0.104 to 0.056 in/sec PPV at distances of 40 to 60 feet. Based on this, construction vibration levels would be well below the 0.50 in/sec PPV damage criteria at the closest residential structures.

In areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and would not be considered significant given the intermittent and short duration of the phases that have the highest potential of producing vibration (jackhammers and vibratory rollers). By use of administrative controls such as notifying adjacent land uses of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration to hours with least potential to affect nearby residences, perceptible vibration can be kept to a minimum and as such would not result in a significant impact with respect to perception.

TABLE 7 Vibration Source Levels for Construction Equipment[1]

Equipment		PPV at 40 ft. (in/sec)	PPV at 60 ft. (in/sec)
Clam shovel drop		0.100	0.054
Hydromill (slurry wall)	in soil	0.004	0.008
	in rock	0.008	0.017
Vibratory Roller		0.104	0.056
Hoe Ram		0.044	0.024
Large bulldozer		0.044	0.024
Caisson drilling		0.044	0.024
Loaded trucks		0.038	0.020
Jackhammer		0.017	0.009
Small bulldozer		0.004	0.004

Mitigation 4a: None Required

Impact 5: **Construction Noise.** Noise levels generated by project construction activities would temporarily elevate ambient noise levels at sensitive land uses in the vicinity. Major noise generating construction activities would be limited to less than one construction season or less. **This is a less-than-significant impact.**

The construction of the project would generate noise and would temporarily increase noise levels at adjacent residential receivers. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment operating on site, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. Construction of the project would involve site improvements, such as the establishment of utilities, excavation of foundations, building erection, paving, and landscaping along with home construction. The hauling of excavated material and construction materials would generate truck trips on local roadways. The project would also include off-site construction of a walking path and installation of a bridge over Casa Grande Creek to connect to the existing trail on the opposite side of the creek. This off-site activity is expected to involve cut and fill work to level and bring the path on both side of the creek to that of the existing path,

[1] Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, May 2006.

the forming and pouring installation of concrete embankments, and setting and installation of an off-site assembled pedestrian bridge with a crane.

Construction activities are typically carried out in stages. During each stage of construction, there would be a different mix of equipment operating. Construction noise levels would vary by stage and vary within stages based on the amount of equipment in operation and location where the equipment is operating. Typical noise levels which during the construction of housing (the project) and public works (the offsite bridge over Casa Grande Creek) at a distance of 50 feet are shown in Table 6, which gives the average noise level ranges by construction phase. Site work and housing construction noise ranges from of 65 to 88 dBA at a distance of 50 feet from the source.

TABLE 6: Typical Ranges of L_{eq} Construction Noise Levels at 50 Feet, dBA

Construction Stage	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	84
Excavation	88	75	89	79	88	78
Foundations	81	81	78	78	88	88
Erection	81	65	87	75	79	78
Finishing	88	72	89	75	84	84
I - All pertinent equipment present at site, **II** - Minimum required equipment present at site.						

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

The nearest noise sensitive uses will be 40 to 60 feet from close-in on-site work and home construction and offsite path and bridge construction activities. Average noise levels produced by on and off-site work at this distance would range from 80 to 90 dBA. Construction activities at this distance would range from 73 to 90 dBA, with an average level of 82 dBA. Home building activities at this distance would range from 63 to 90 dBA with an average level of 77 dBA. These noise levels drop off at a rate of about 6 dBA per doubling of distance between the noise source and receptor, such that noise levels produced during most site construction activities, which would occur at distances of 300 feet or more from adjacent noise sensitive uses, would produce average noise levels of 66 dBA or less during site work activities and 61 dBA or less during home building activities.

A review of the construction schedule indicates that though the project would take 19 months to complete, with site work would occur for 110 days and exterior home construction would occur for 300 days. Though not specifically included in this schedule, we expect construction of a walking path and installation of a bridge over Casa Grande Creek to take a week or less to complete. Based on this timetable, the construction noise levels at various distances discussed above, and a consideration that once intervening homes are built, they would provide some degree of noise attenuation at the surrounding residences, we expect that the existing residences adjacent to the project site would not be exposed to construction related noise levels exceeding 60 dBA L_{eq} for a period of greater than one year.

The following standard controls are assumed to be included in the project:

- Pursuant to the Municipal Code, restrict noise-generating activities at the construction site or in areas adjacent to the construction site to the hours between 7:00 a.m. and 10:00 p.m., Monday through Friday and 9:00 a.m. to 10:00 p.m. on Saturday, Sunday and State, Federal or Local Holidays. When construction is occurring within 100 feet of existing residences, then construction shall occur between 9 am and 5 pm and shall be prohibited on Sundays and Holidays.

- High noise-producing activities, such as excavation and grading and construction finishing, shall be scheduled between the hours of 8 am and 5 pm to minimize disruption on adjacent noise sensitive uses.
- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise generating equipment (e.g., compressors) as far as possible from adjacent residential receivers.
- Acoustically shield stationary equipment located near residential receivers with temporary noise barriers.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- The construction contractor will implement appropriate additional noise reduction measures that include shutting off idling equipment after 5 minutes (as feasible) and notifying adjacent residences (at least one time) in advance of construction work.
- Construction worker's radios will be controlled to not exceed ambient noise levels beyond the limits of the project site boundaries.
- Heavy equipment, such as paving and grading equipment will be stored on-site whenever possible to minimize the need for extra heavy truck trips on local streets.
- Two weeks prior to the commencement of construction, notification in writing will be provided to residents within 300 feet of the project site, disclosing the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period.
- The construction contractor will designate a "disturbance coordinator" responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem.

With the implementation of these controls, and the limited duration of the noise generating construction at the adjacent noise sensitive uses, the substantial temporary increase in ambient noise levels associated with construction activities would be less-than-significant.

Mitigation Measure 5: No additional measures required